

**Exploring Constructs of Anxiety Through Social Media, Meaning Making and
Measurement.**

Amber Paloma Ovens

Candidate Registration Number: 100182393/2

Primary Supervisor: Dr Eleanor Chatburn

Secondary Supervisor: Dr Fergus Gracey

A thesis submitted in partial fulfilment of the degree of

Doctorate in Clinical Psychology

University of East Anglia

Faculty of Medicine and Health Sciences

Norwich Medical School

Submission: March 2025

Thesis portfolio word count: 36,402 (excluding title page, copyright statement, acknowledgements, table of contents, list of illustrations, tables, figures or images, glossary of terms and appendices):

This copy of the thesis has been supplied on condition that anyone who consults it is understood to recognise that it's copyright rests with the author and that use of any information derived therefrom must be in accordance with current UK Copyright Law. In addition, any quotation or extra must include full attribution.

Thesis Portfolio Abstract

Background: Anxiety disorders affect many people across the lifespan and around the world, and are thought to be pervasive conditions, therefore, furthering our understanding and measurement of them is vital.

Aims: This thesis sought to explore the constructs of anxiety, firstly by evaluating the psychometric properties of a social anxiety measure, and secondly by investigating the conceptualisations of anxiety disorders through online discourses.

Methods: A Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) systematic review was conducted across six databases to synthesise the psychometric evidence for the Mini-Social Phobia Inventory (Mini-SPIN). Additionally, a social constructionist qualitative study using a Multimodal Critical Discourse Analysis (MMCDA) was conducted to explore anxiety discourses under two hashtags on TikTok.

Results: The systematic review identified eight versions of the Mini-SPIN and found limitations in their development and internal structure, which had subsequent implications on recommendations. The empirical study identified five discursive themes from videos under #anxiety and three discursive themes from videos under #social anxiety. The empirical study also applied a critical Marxist perspective to the analysis to understand various power relations.

Conclusions: This thesis portfolio found that the Mini-SPIN and its versions did not meet COSMIN standards due to limitations in development, therefore, we caution against their use until further research has been conducted. Moreover, this thesis provided critical insight into the role of TikTok in the construction of anxiety, suggesting continued dissemination of dominant medical ideologies, neoliberalism and possible commodification of anxiety ¹

¹ This portfolio builds on work from ClinPsyD Thesis proposal and may contain similar work

Access Condition and Agreement

Each deposit in UEA Digital Repository is protected by copyright and other intellectual property rights, and duplication or sale of all or part of any of the Data Collections is not permitted, except that material may be duplicated by you for your research use or for educational purposes in electronic or print form. You must obtain permission from the copyright holder, usually the author, for any other use. Exceptions only apply where a deposit may be explicitly provided under a stated licence, such as a Creative Commons licence or Open Government licence.

Electronic or print copies may not be offered, whether for sale or otherwise to anyone, unless explicitly stated under a Creative Commons or Open Government license. Unauthorised reproduction, editing or reformatting for resale purposes is explicitly prohibited (except where approved by the copyright holder themselves) and UEA reserves the right to take immediate 'take down' action on behalf of the copyright and/or rights holder if this Access condition of the UEA Digital Repository is breached. Any material in this database has been supplied on the understanding that it is copyright material and that no quotation from the material may be published without proper acknowledgement.

Table of Contents

Thesis Portfolio Abstract	2
Tables and Figures	7
Acknowledgements	8
Chapter 1: Introductory Chapter	9
Conceptualisation of anxiety disorders	10
Language	13
Social media	15
Measuring social anxiety.....	16
Aims of the Portfolio.....	18
Chapter 2: Systematic Review	19
Abstract	20
Introduction	21
Research questions:	23
Methods	23
Search Strategy.....	24
Screening.....	25
Eligibility criteria	25
Data Extraction.....	25
Quality Assessment	26
Data Synthesis	27
Results	28
Studies identified.....	28
Overview of study reports and studies	30
Measurement properties	54
<i>Content validity</i>	54
<i>Internal structure (structural validity, internal consistency, cross-cultural validity/ measurement invariance and measurement error)</i>	55
<i>Reliability</i>	56
<i>Criterion validity</i>	56
<i>Construct validity</i>	57
<i>Responsiveness</i>	57
Recommendations:	62
Discussion	62
Strengths and Limitations.....	66
Implications	67

References	69
Chapter 3: Bridging Chapter	81
Chapter 4: Empirical Paper	83
Abstract	84
Introduction	85
Research questions	89
Methods	89
Design.....	89
Ethical considerations.....	91
Data collection.....	92
Analysis	94
Results	95
#anxiety	95
<i>Psychoeducation videos</i>	97
<i>Lived experience videos</i>	99
<i>Dominant anxiety discourse</i>	101
<i>Comments</i>	101
#socialanxiety	103
<i>Light-hearted videos</i>	104
<i>Psychoeducation</i>	105
<i>Lived experience videos</i>	106
<i>Comments</i>	107
Power	108
Discussion	111
Strengths, limitations, and future directions.....	113
Implications	115
Conclusion.....	116
References	118
Chapter 5: Extended Methodology, Results and Reflexivity	128
Methods	128
Additional Results	135
Reflexivity	138
Chapter 6: Discussion and Critical Evaluation Chapter	142
Summary of Main Findings.....	142
Combined Discussion.....	145
Strengths and Limitations.....	147

Consideration of Alternative Methodologies	150
Implications and Future Research	151
Author reflections.....	154
Overall Conclusion.....	156
References.....	158
Appendices.....	195
Appendix A: Journal requirements for the Journal of Affective Disorders.....	196
Appendix B: PRSIMA Checklist.....	213
Appendix C: Deviations from PROSPERO registration	217
Appendix D: Full search strategy	218
Appendix E: COSMIN criteria for good measurement properties and COSMIN definitions of measurement properties.....	226
Appendix F: Prior hypothesis set for construct validity and responsiveness with rationales	230
Appendix G: Table for determining GRADE and downgrading based on Risk of Bias, imprecision, inconsistency and indirectness	234
Appendix H: Studies excluded and rationales.....	235
Appendix I: Risk of Bias and demographic information for included studies	237
Appendix J: Content validity table showing reviewer ratings of content validity for Mini-SPIN, Mini-SPIN-R and all language versions	280
Appendix K: Gold standard comparators for criterion validity.....	293
Appendix L: Extracted data for each study per OMI	296
Appendix M: Journal requirements for Qualitative Research in Psychology Journal	327
Appendix N: Consolidated criteria for Reporting Qualitative research checklist (COREQ).....	337
Appendix O: Ethical approval letter from UEA FMH S-REC.....	339
Appendix P: Flow diagram illustrating process of analysis	340
Appendix Q: Screenshot extract from excel sheet illustrating initial coding process.....	341
Appendix R: Amendment to ethics for new hashtag.....	342
Appendix S: Example of the analytic process and descriptions of levels of analysis	343
Appendix T: Codebook for comments under #anxiety	346
Appendix U: Codebook for comments under #socialanxiety.....	347
Glossary	348

Tables and Figures

Chapter 2: Systematic Review

Figure 1. PRISMA diagram	29
Table 1. Characteristics of included OMIs	32
Table 2. General characteristics of included study reports	34
Table 3. Summarised results for quality of evidence per measurement property.....	58

Chapter 4: Empirical Research Project

Table 1. Metadata of videos under #anxiety	93
Table 2. Metadata of videos under #socialanxiety.....	93
Table 3. Video characteristics for #anxiety	95
Table 4. Themes from comments under #anxiety.....	102
Table 5. Video characteristics for #socialanxiety	103
Table 6. Themes from comments under #socialanxiety	107
Figure 1 Concept map of power	110

Chapter 5: Extended Methodology, Results and Reflexivity

Table 1. Adherence to Yardley (2000) principles.....	131
Figure 1. Concept map of comments under #anxiety	136
Figure 2. Concept map of comments under #socialanxiety.....	137

Acknowledgements

This thesis is dedicated to my late grandmother Judith Thomas who passed away on the 4th of April 2024. Language and context are paramount within this portfolio so acknowledging my own higher context feels important. I wish for nothing more than to be able to share this with her. However, I am comforted by the thought of making her proud through completing this thesis and holding her in mind every step of the way. Thank you, Granny.

I would also like to express my thanks and gratitude towards my research supervisors, Eleanor, Fergus and Kenny who have guided me throughout this process with words of encouragement and lots of reassurance. Thank you for all your time and knowledge it is really appreciated. Thank you also to Jason Hassan for generously giving up your time, for being such a supportive friend and colleague throughout this whole process. Finally, I would also like to express thanks to Lucy Foulkes for her aid during the formative stages of this project.

I would also like to thank my family, firstly my mum for her continuous unwavering belief in me and unconditional love and support. Thank you, mum, for being the most inspiring, incredibly strong woman and the most caring and compassionate mother. Thank you to my brother, for always making sure I don't get too sensible and boring, for reminding me to live a life I am proud of. I would also like to show an enormous thank you to my girlfriend, without you I would not be writing this. I cannot put into words how much you have supported me throughout this process, from nights of worry, missed weekends and piles of laundry that I forgot to do as I prioritised thesis work. Els you have not only supported me practically but more importantly emotionally. I have never met someone so kind, patient and empathetic. So, thank you for your love and support.

Chapter 1: Introductory Chapter

Although it is widely recognised that anxiety is the most pervasive psychological phenomenon of our time and that it is the chief symptom in the neuroses and in the functional psychoses, there has been little or no agreement on its definition, and very little if any, progress in its measurement. (Hoch & Zubin, 1950 as cited in Spielberger, 2013, p.4)

Since 1950 there have been advancements in both the conceptualisation and measurement of anxiety disorders, however, the expansion of measurement tools and theoretical understandings has created some considerable heterogeneity. While some measures assess anxiety disorders as a multidimensional construct (Liebowitz, 1987), others assess it as a unidimensional construct (Mathyssek et al., 2013). Furthermore, even multidimensional measures, can assess different dimensions. For example, the Social Phobia Inventory (SPIN) measures social anxiety against the dimensions of fear, avoidance, and physiological symptoms (Connor et al., 2000), while other measures, such as the Social Anxiety Questionnaire, prioritise dimensions of public speaking and criticism and embarrassment (Caballo, et al 2012). Additionally, dominant theories of anxiety disorders also draw upon varied understandings and use different terms to capture the same construct (Behar et al., 2009). Hence, it could be argued that we still lack a consensus over an agreed conceptualisation, which then impacts our ability to accurately measure it.

The quest for a ‘true’ definition of anxiety is based on realism, the assumption that there is an objective reality (Cacioppo et al., 2004). However, other positions hold different assumptions. Social constructionism, for instance, assumes that anxiety exists within a social context, meaning our understanding of it is constructed through social phenomena such as discourses and practices. This position might suggest that it may not be possible to reach agreement on one unifying, stable conceptualisation (Burr & Dick, 2017).

This thesis portfolio aims to explore the conceptualisation of anxiety disorders through two divergent frameworks: a positivist stance investigating a measure of social anxiety and a radical Marxist social constructionist approach exploring anxiety discourses on social media. To support these later papers, this introductory chapter will outline historical factors, philosophical and theoretical approaches as well as current contexts and understandings, to help us consider how the construct of anxiety has evolved (Burr, 2015).

Conceptualisation of anxiety disorders

The current accepted conceptualisation of anxiety is predominantly understood in western society through medical language provided by the diagnostic and statistical manual 5th edition (DSM-IV-TR) (American Psychiatric Association (APA), 2022), which includes categorisation of anxiety disorders such as generalised anxiety disorder (GAD) and social anxiety disorder (SAD), of which this thesis will focus on.

Anxiety is defined as an excessive worry, occurring most days for at least six months, about a number of situations and that the person finds difficult to control (APA, 2022; APA, 2015). SAD, which is also known in the literature as social phobia (Beidel & Randall, 1994), is defined as a persistent fear about social situations where the individual may be exposed to possible embarrassment or negative evaluation by others (APA, 2022).

Both manifestations of anxiety are thought to be pervasive conditions, with GAD having a lifetime prevalence of 6.2% and SAD having a lifetime prevalence of 13% (Szuhany & Simon, 2022). Anxiety disorders are typically found to have an onset in adolescence (De Lijster et al., 2017; Garcia and O'Neil, 2021), with some studies showing its presentation as early as childhood (Ginsburg, LA Greca, & Silverman, 1998; Rao et al., 2007).

To advance understanding of the concept of anxiety, researchers have explored multiple perspectives. Biological approaches have emphasised the critical role of neurotransmitter systems, including GABAergic, serotonergic and noradrenergic systems, in

the regulation and modulation of anxiety (Nuss, 2015; Ressler & Nemeroff, 2000). Research has also highlighted key areas of the limbic system, such as the amygdala and hippocampus, which along with the prefrontal cortex are thought to be involved in the processing of anxiety (Xu et al., 2021; Martin et al., 2009). Additionally, family and twin studies have demonstrated moderate heritability estimates for anxiety disorders (Hettema et al., 2001). These biological factors may suggest that anxiety could be conceptualised from an evolutionary perspective as an adaptive survival mechanism (Gilboa-Schechtman et al., 2014; Nesse, 1994; Price, 2003). Nevertheless, given that anxiety often presents psychologically and behaviourally as well as physiologically, others advocate for a comprehensive biopsychosocial approach that integrates psychological and social factors (Greene et al., 2013; Steimer, 2002).

The most influential and subsequently dominant psychological theory of anxiety is the Cognitive Behavioural Theory which evolved from the work of Aaron Beck and colleagues (Beck et al., 1985). According to Beck et al (1985), anxiety develops due to maladaptive core beliefs (e.g., “the world is an unsafe place”). These beliefs give rise to dysfunctional assumptions or rules for living (e.g., “I must stay in control”). When these assumptions are triggered, they lead to anxious arousal. In response, individuals engage in compensatory behaviours such as avoidance, which in turn maintain anxious beliefs (Dobson et al., 2018). Cognitive behavioural theory also underpins many of the dominant disorder-specific models of anxiety, such as Dugas et al’s (1998) Intolerance of Uncertainty Model for GAD and Clark and Wells’ social anxiety model (1995). The latter model attributes social anxiety disorder to the interaction of negative beliefs about the self, self-focused attention, safety behaviours and ruminative processes.

Biological factors and dominant psychological theory also inform treatments for anxiety. As such, Cognitive Behavioural Therapy (CBT) and pharmacological interventions

are both recommended within the National Institute for Health and Care Excellence (NICE) guidelines for anxiety disorders (NICE, 2011; NICE, 2013). The NICE guidelines are a set of evidence-based recommendations for the assessment and treatment of specific conditions and are intended for health and social care professionals. The NICE guidelines broadly conceptualise anxiety disorders in line with diagnostic categories. Many of the NICE recommendations for anxiety disorders follow a biopsychosocial approach, including psychological support, social considerations and medication (NICE, 2011; NICE, 2013). Additionally, the NICE guidelines offer a stepped care approach, meaning that patients start with the least intrusive intervention and work up based on severity (Kendall et al., 2011). As well as being recommended by NICE, both medication and CBT have been shown to be effective treatments within the literature (Bandelow et al., 2018; Cuijpers et al., 2016; Bandelow et al., 2015). However, without appropriate intervention anxiety can be chronic and enduring (Rynn & Brawman-Mintzer, 2004; Szuhany & Simon, 2022). Therefore, it is crucial that we enhance our understanding of anxiety to improve its recognition.

The two philosophical paradigms used in this thesis differ on their conceptualisations of anxiety. The positivist view supports the current taxonomy of psychiatric conditions, suggesting that knowledge is objective, and anxiety is a true tangible disorder that can be clearly understood and measured through empirical testing (Park et al., 2020). Social constructionism contends positivist ideas and instead argues that knowledge is not objective but rather produced through language and social processes. Therefore, the constructionist position challenges the idea that there is a single universal anxiety disorder but rather an experience that is formed by social, historical and political contexts (Burr, 2015; Burr & Dick, 2017).

Postmodernist theories have sought to understand the socially defined conceptualisations of mental health and understand the role of power. Foucauldian theory

argues that mental health has been problematised due to beliefs that our understandings can be held within medical truths, which has been shaped through power-knowledge relations (Foucault, 1980; Cohen, 2017; Cisney & Morar, 2020). Foucauldian theory suggests that the production of diagnostic categories has, overtime, influenced what society deem as “normal”, and that medical professionals have imposed an ideology that mental health is a medical illness (Foucault, 1980; Burr & Dick, 2017). Other critical perspectives have also challenged the view of mental health as a medical truth. Cohen’s (2017) application of Marxist theory poses an argument for the process of capitalism in psychiatric hegemony. Cohen’s (2017) Marxist critique suggests that psychiatric diagnoses are maintained, often by professionals, because they serve to sustain existing power relations and provide economic benefit through methods such as treatments. This approach also argues that anxiety is not a real entity, but rather a social process that functions to serve a capitalistic society. Both approaches emphasise the role of power in constructing and maintaining meaning.

The Foucault theory (1980) and critical perspectives mentioned above align with the social constructionist position held within the empirical project of this thesis, which emphasise the importance of social process such as the use of language and discourse in the construction of meaning (Burr, 2015).

Language

The phenomenon of anxiety is something we have all experienced. However, it is important to note that anxiety exists on a continuum from a normal response to a clinical disorder. Some have argued that the distinction between the two is somewhat arbitrary and that we lack the language to differentiate them (Silverman & van Schalkwyk, 2019; Borkovec et al., 1991).

Language is an important vehicle for developing and sharing concepts, language enables us as a society to collectively understand, share and socially construct meaning

(Lyonns, 2000; Burr, 2015). The language used to describe anxiety has evolved over the years from words such as “Pantophobia” thought to be used in 1700s (Crocq, 2017) and “neurasthenia” a diagnostic term coined by Beard in 1869 (Beard, 1869; Crocq, 2017), to Freud’s conceptualisation of anxiety-neurosis in 1894 (Spielberger, 2013). Anxiety was then recognised as its own category in the DSM third edition (DSM-3) (APA, 1980) but was initially called “Neuroses” (Crocq, 2015; Craske, et al., 2011). With each revision of the DSM there has been an evolution of anxiety disorders, such as changes in definitions (Letamendi et al., 2009) and inclusion of presentations such as selective mutism (APA, 2015). The DSM 5 now separates anxiety into 11 distinctly different presentations (APA, 2022).

As more anxiety disorders have been added to the DSM, it changes our understanding. This can be explained by a theory called linguistic determinism proposed by a linguist called Whorf, who suggested that the language and words we use effects how we perceive reality. The Sapir- Whorf hypothesis highlights how the language we use is connected to our thoughts (Kay & Kempton, 1984; Whorf, 1956; Whorf, 2012). This idea along with social constructionist theories suggest that as our language and discourse changes overtime, so does our understanding and perceptions of what is considered normal (Burr, 2015), demonstrating how our use of language and socially agreed upon ideologies impact what we normalise and pathologize.

Overall, the process of socially constructing anxiety through language is theorised to have been largely influenced by the DSM (Cohen, 2017). The DSM has provided a model and discourse for how we might understand anxiety, and although it was predominately created for the medical field the DSM lexicon has also been used to inform pharmaceutical treatments, insurance, policy as well as our everyday definitions (Horwitz, 2013; Cohen, 2017).

Social media

Historically, the portrayal of mental illness in the media has been very medical, in which mental health has been seen as an illness and a deviation from the norm (Stuart, 2006). The media has historically utilised language embedded with shame, words such as “crazy” and “dangerous” often portraying extremes (Wahl, 1992). The media’s use of unhelpful language has the potential to generate negative narratives, and overtime contribute to the stigma of mental health through misrepresentation (Srivastava et al., 2018).

Over the past decade social media has expanded, providing people with instant access to information. In January 2020, the world was hit by a global pandemic, increasing our time at home in lockdowns. During this period many people were finding themselves spending more time on social media sites such as TikTok (Hamilton et al., 2023). Notably, TikTok had a significant increase in users, making it the fastest growing social media platform (McCashin & Murphy, 2023).

The increase in mental health difficulties after the pandemic has been topic of much study over recent years (Kumar & Nayar, 2021; Ma et al., 2021). It has been hypothesised that due to the heightened levels of uncertainty during this period, social media became a source for connection and information seeking (Jokic-Begic et al., 2020). It has also been hypothesised by Foulkes and Andrews (2023) that the presence of mental health content online has contributed to a greater awareness and possible ‘overinterpretation’ of symptoms. They argue that together a greater awareness and overinterpretation have possibly contributed to the rise in mental health.

Overall, research has highlighted a connection between social media and mental health conditions (Keles et al., 2020; Foulkes & Andrews, 2023; O’Day & Heimberg, 2021). Social media has now become a platform to disseminate information (Oyighan & Okwu, 2024), however, due to the accessibility of social media anyone can share their experiences,

which may then cause misinformation (Zhu et al., 2018; Suarez-Lledo & Alvarez-Galvez, 2021). Social media sites such as TikTok are now becoming a central hub for people to easily consume mental health information which subsequently may aid in the social construction of anxiety disorders (Kay & Kempton, 1984). This thesis hopes to further explore the anxiety content and discourses found within TikTok through a social constructionist lens (Burr & Dick, 2017).

Measuring social anxiety

Early attempts to measure psychological phenomena can be seen in work by Frances Galton and then Alfred Binet, who sought to measure the construct of intelligence (White & Hall, 1980; Jones & Thissen, 2006; Galton, 1884). Over time, additional contributions and the development of theory and procedures have led to the formalization and standardization of psychological measurement tools (Rust & Golombok, 2014). Psychological measurement tools have since evolved into contemporary measures for specific disorders, such as the State-Trait Anxiety Inventory (Spielberger et al., 1971) for assessing anxiety. However, there are now several methods for assessing anxiety disorders, including diagnostic interviews (Brown & Barlow, 2014), questionnaires completed by parents (Bowers et al., 2020), patient reported outcome measures (PROMS; Connor et al., 2000) and measures administered by clinicians (Liebowitz, 1987).

One difficulty with measuring psychological phenomenon such as anxiety is that it is not directly observable, even though at times we may be able to observe its symptoms (DeVellis, 2006). This has led to many different measures assessing the same construct through slightly different units and factors (Anunciacao, 2018). As a result, there are now dozens of measures to choose from, which can make it hard for clinicians and researchers to know which to select.

The effectiveness and appropriateness of measures depend on their psychometric properties (Terwee et al., 2009; Terwee et al., 2016), which is why evaluating the properties of measures is of great importance (Mokkink et al., 2024; Anunciacao, 2018). Central to the quality of psychometric measurement tools are two models which provide frameworks for analysing the psychometric properties: the Classical Test Theory (CCT) and the Item Response Theory (IRT) (Morizot et al., 2007; Anunciacao, 2018).

The CCT assumes that there is a ‘true score’ (Anunciacao, 2018) in which the observed score obtained from the scale is equal to the true score plus an error (DeVellis, 2006). The CCT also assumes that the error is random, independent and that items are strictly parallel to the latent construct (anxiety), meaning that all the items are assessing anxiety. It assumes that covariances across the items are equal and that all items are good predictors of anxiety (DeVellis, 2006; Anunciacao, 2018),

On the other hand, IRT can also be used to analyse psychometric properties of a scale. IRT looks at how the items relate to a latent construct (anxiety), as well as how likely an individual is to perform based on two parameters: item difficulty and item discrimination (the ability to differentiate between individuals with varying levels of anxiety). IRT assumes that the individual will have an underlying presence of anxiety, so is concerned with performance on each item independently as this will provide information on their level of anxiety (DeMars, 2010; Hambleton & Swaminathan, 2013). IRT uses methods such as Item response analysis (IRA), to calculate the probability of a response using item parameters to estimate the presence of the latent construct (Harvey & Hammer, 1999; DeMars, 2010; Reise & Waller, 2009). These models both help to assess scales to ensure they are robust assessments of the latent construct. Overall, it is important that psychometric measures can reliably and validly distinguish between clinical presentations and normal experiences of anxiety.

Aims of the Portfolio

This thesis portfolio aims to explore the construction of anxiety disorders on social media and evaluate the psychometric properties of a measure of social anxiety, drawing upon two divergent epistemological approaches. This portfolio contains a Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) systematic review of the psychometric properties of a brief social anxiety measure (Chapter 2). The systematic review is conducted through a positivist lens, synthesising empirical evidence to help inform the use of measures in clinical practice. Following this is a bridging chapter (Chapter 3), included due to word limits on journals and to support in the understanding between the two papers. This thesis also includes an empirical paper (Chapter 4) and an extended method section (Chapter 5), which qualitatively investigates the digital multimodal construction of anxiety disorders on TikTok through a social constructionist and Marxist theoretical framework. This approach helps to further our understanding of how anxiety is influenced by social practices, norms, language and politics.

Although the two epistemological approaches of the papers may seem incongruent, the hope is that they can provide a holistic understanding of the socially constructed conceptualisation of anxiety, as well as more practical guidance for those working clinically. This thesis concludes with a final critical reflective chapter in which the author shares reflections on the research process and provides an overall critical appraisal.

Chapter 2: Systematic Review

A Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) Systematic review of the Psychometric Properties of the Mini Social Phobia Inventory (Mini-SPIN)

Amber Ovens^{a*}, Kenny Chiu^a, Jason Hassan^a, Fergus Gracey^a, Eleanor Chatburn^a

^a Department of Clinical Psychology, University of East Anglia, Norwich Research Park,
Norwich, Norfolk, NR4 7TJ, United Kingdom.

*Corresponding author: Amber Ovens, University of East Anglia. Email: a.ovens@uea.ac.uk

Word count: 7998 (excluding references)

This study has been reported in accordance with Journal of Affective Disorders, please see
Appendix A for journal requirements.

Abstract

Aim: This review aimed to evaluate the evidence for the psychometric properties of the Mini Social Phobia Inventory (Mini-SPIN) and its versions, to determine if it is a valid, reliable and responsive measure of social anxiety.

Methods: A comprehensive systematic search was conducted on the 5th of December 2024, across six databases (Medline, Medline Ultimate, PsychINFO, CINAHL, Academic search Ultimate and Web of Science) and supported with supplementary search methods. Eligible studies were peer reviewed, English, and evaluated the psychometric properties of any version of the Mini-SPIN in any population. The Consensus- based Standards for the selection of health Measurement Instruments (COSMIN) was used to assess extracted data, along with the COSMIN Risk of Bias tool to perform quality assurance. Two independent raters were used throughout.

Results: Twenty-three articles were included, assessing eight measures: the Mini-SPIN, Mini-SPIN-R and six language versions. No development studies were found for any version of the Mini-SPIN. Limited and doubtful structural validity studies were retrieved, so it was not possible to derive reliable conclusions regarding dimensionality. Without evidence of uni-dimensionality in line with COSMIN guidelines internal consistency could not be determined. The German version demonstrated adequate cross-cultural validity for age and gender and the original Mini-SPIN demonstrated good responsiveness and reliability. Criterion validity was sufficient but construct validity was variable across the measures.

Conclusion: Currently the Mini-SPIN and its versions do not meet COSMIN requirements, therefore, we caution against their use until further research is conducted.

Keywords: Social anxiety, psychometrics, valid, reliable

Introduction

Social anxiety disorder (SAD) is a pervasive mental health condition that affects people across the life span (Rose & Tadi, 2022) often with an onset in adolescence (Kessler et al., 2005; Khalid-Khan et al., 2007), hence early and quick identification is crucial. However, there are several challenges to the assessment of SAD, meaning that it often goes unrecognised (Katzelnick & Greist, 2001). Challenges in assessing SAD include the ability to differentiate the presentation from similar constructs such as shyness (Heiser et al., 2009), as well as social concerns from those with SAD which may interfere with accessing assessment and support (Olfson et al., 2000). However, without robust assessment tools to accurately detect SAD, it can be hard to access treatment. Research has found that without appropriate intervention, SAD can have major implications on people's quality of life (Lochner et al., 2003; Barrera & Norton, 2009), increased chance of co-occurring conditions (Chartier, Walker, & Stein, 2003), as well as risk of social issues such as unemployment (Rose & Tadi, 2022).

Psychometric measures aid in the ability to screen for SAD, to identify patient needs and inform clinical decision making (Holmes et al., 2017; Devlin & Appleby, 2010). Some SAD measures have proven to have good psychometric properties such as the Liebowitz social anxiety scale (Heimberg et al., 1999) and the Social Phobia Anxiety inventory (García-López et al., 2001), however, measures are often limited by their length, with some containing up to 32 items (Beidel et al., 1995). Subsequently, some measures have been condensed into brief versions (Connor et al., 2001) to help reduce assessment burden, improve feasibility and accessibility (Spitzer et al., 2006; Carlson et al., 2011). As such, brief measures may be more advantageous when there is a time constraint, and they may also reduce the likelihood of invalid responses through reducing opportunity for fatigue (Robins et al., 2001). Additionally, some brief measures such as the Brief Fear of Negative Evaluation

scale have demonstrated greater psychometric properties in comparison to its longer counterpart (Rodebaugh et al., 2004).

There are a few developed brief measures for SAD including the Mini Social Phobia Inventory (Mini-SPIN) (Connor et al., 2001), which is an adapted version of the original 17 item Social Phobia Inventory (SPIN) (Connor et al., 2000). The SPIN has previously demonstrated adequate psychometric properties, including good reliability through internal consistency and test retest, good convergent and divergent validity and responsiveness to treatment (Antony et al., 2006).

The Mini-SPIN is a three-item abbreviation, containing item 6 “fear of embarrassment causes me to avoid doing things or speaking to people”, item 9 “I avoid activities in which I am the centre of attention”, and item 15 “being embarrassed or looking stupid are among my worst fears” from the SPIN. Despite originally developed for use in adults (Connor et al., 2001) the Mini-SPIN is now used in various populations, including children (Hathway et al., 2024) and adolescents (Garcia-Lopez & Moore, 2015). Therefore, it is important to ensure that the Mini-SPIN has valid items that can be used to reliably distinguish between clinical presentations and normal experiences of anxiety across the life span.

Measures are often selected based on the psychometric properties (Terwee et al., 2009) such as validity, which is “the degree to which an instrument measures the constructs it purports to measure” (Mokkink et al., 2024a), reliability, “the degree to which the measurement is free from measurement error” (Mokkink et al., 2024a), and responsiveness, “the ability of an instrument to detect change over time in the construct to be measured” (Mokkink et al., 2024a). However, studies of psychometric properties for SAD measures have not been well synthesised, leaving the risk of making suboptimal clinical decisions (Mokkink et al., 2024a).

A systematic review on the psychometric properties of trait social anxiety measures conducted by Modini et al (2015) included a review of the Mini-SPIN in adults. However, at the time of their review they only found three articles on the psychometric properties of the Mini-SPIN and one article on the Revised Mini Social Phobia Inventory (Mini-SPIN-R). They concluded an indeterminate internal consistency but adequate reliability for the Mini-SPIN and adequate content validity for the Mini-SPIN as it was derived from the original SPIN. However, as this systematic review assessed a range of measures, it did not describe in detail all nine psychometric properties outlined by COSMIN (Mokkink et al., 2024a). Therefore, it is important to conduct a rigorous COSMIN compliant systematic review to update and synthesise all the current evidence for the Mini-SPIN and its versions.

The present systematic review utilises the COSMIN guidelines for evaluating psychometric properties, as it ensures comprehensive evaluation and consistency in standards across reviews of psychometric properties (Mokkink et al., 2024a). This review aims to evaluate the evidence for the psychometric properties of the Mini-SPIN and its versions, to determine if it is a psychometrically robust measure for SAD.

Research questions:

- 1) What is the evidence that the Mini-Social Phobia Inventory and its versions are psychometrically robust (reliable, valid and responsive) measures for assessing social anxiety across the life span?
- 2) What populations (i.e. age ranges) has the Mini-SPIN been validated in? Have clinical populations been assessed and are there any cross-cultural validation studies?

Methods

This systematic review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) of Outcome Measurement Instruments (OMIs) using

the Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) guidelines (Elsman et al., 2024), see Appendix B for PRISMA checklist. Additionally, the review was prospectively registered with PROSPERO (CRD42024616512) (Appendix C).

Search Strategy

The COSMIN methodology for reviewing Patient-Reported Outcome Measures (PROMs) guidelines were used to inform this systematic review (Mokkink et al., 2024a). The final search strategy was developed in agreement with an academic librarian and was informed by Terwee et al (2009) validated search filters. The Terwee et al (2009) PUBMED search filter was used as prescribed for PUBMED Medline and Web of Science. However, we adapted the search filter for the use of EBSCO, due to the University of East Anglia (UEA) access. The search strategy was also adapted to suit each database, including the use of Mesh, index and Boolean operators. We did not use limiters, time constraints or restrictions on age ranges. Additionally, our search included the Mini-SPIN and any of its versions. The search strategy consisted of relevant combined concepts and related terms as suggested by COSMIN (1. Measure, 2. COSMIN Search filter for Psychometric properties) (Mokkink et al., 2024a), see Appendix D for full search strategies:

1. “Mini SPIN” OR “Mini Social Phobia Inventory” OR “Mini-SPIN-R” OR “MINI-SPIN”
2. “psychometrics” OR “reliab*” OR “valid*”

In total six databases were searched on the 5th of December 2024: PUBMED Medline, MEDLINE Ultimate (EBSCO), APA PsychINFO (EBSCO), Cumulative Index to Nursing and Allied Health (CINAHL Ultimate) (EBSCO), Web of Science and Academic Search Ultimate. Additionally, manual search methods were also conducted, as recommended by COSMIN (Mokkink et al 2024a), during December 2024. Manual searching involved both backward reference list checking and forward citation tracking using Google Scholar and

Research Rabbit (Hinde & Spackman, 2015). Data was then extracted onto a reference manager Rayyan (Ouzzani et al., 2016).

Screening

Articles were screened initially on title and abstract and then a full text screening. To examine inter-rater reliability, 25% of the title/ abstract screening and 25% of the full paper screening was replicated by an independent reviewer (JH). During screening if reviewers were unsure, articles were included into the next stage to allow for a more in-depth exploration. If reviewers could not reach an agreement, the last author EC was consulted.

Eligibility criteria

Papers were included if they were in English, published in peer reviewed journal, and assessed the psychometric properties or development of the Mini-SPIN or its versions as one of the main aims. Participants could be any age and from any population. Studies which assessed psychometric properties as a secondary aim were only included at title and abstract screening stage if they mentioned psychometrics in the abstract.

Excluded types of study designs were systematic reviews, single case reports and studies with a sample size of less than 30 participants. Papers were also excluded if they only reported using the Mini-SPIN or its versions as an outcome measure but did not directly assess psychometric properties. Moreover, papers were excluded in which the Mini-SPIN or its versions were used as a comparison instrument and there was no direct assessment of the Mini-SPIN psychometrics measurement properties as defined by COSMIN. Studies were also excluded in cases where it was not possible to access the full text.

Data Extraction

Data extraction was conducted by the first author (AO) and checked by second reviewer (JH), as per COSMIN guidelines (Mokkini et al., 2024a). Data were extracted and stored on

the COSMIN's Microsoft Excel form for review management (Terwee & Prinsen, 2018) involving extracting data on study characteristics, characteristics of the measure, sample populations and psychometric properties (Mokkink et al., 2024a).

Quality Assessment

The COSMIN Risk of Bias checklist (RoB) was used to assess the quality of included studies (Mokkink et al., 2018) and COSMIN definitions and criteria for good measurement properties was used to judge the evidence (see Appendix E, Mokkink et al., 2024a; Mokkink et al., 2024b). Additionally, evaluating evidence for reliability, content validity and responsiveness was supported by additional published work (Mokkink et al., 2021a; Mokkink et al., 2020; Terwee et al., 2018a; Mokkink et al., 2021b, respectively).

RoB was conducted independently by both the first author (AO) and then third author (JH), any conflicts were resolved by reaching a consensus, if this was not possible then EC and KC were consulted. The COSMIN RoB allows each study to be assessed, for each measurement property and per sample. The RoB provides each study with a rating of either “Very Good”, “Adequate”, “Doubtful”, or “Inadequate” based on COSMIN pre-set criteria and adopts a “worst score counts” method (Mokkink et al., 2024a). This study follows the updated and newest revision of the COSMIN standards and manual (Mokkink et al., 2018; Mokkink et al., 2024a). The newer standards do not include consideration of sample sizes for single studies when studies are being pooled together in a review. Therefore, sample size was considered at data synthesis as an “aggregated sample” (Mokkink et al., 2018), except for the measurement properties that cannot be pooled together such as structural validity and cross-cultural validity, where sample size was considered important methodological features in individual studies.

Data Synthesis

The COSMIN criteria for good measurement properties were applied to each result (Appendix E). Each study was then rated either sufficient (+), insufficient (-) or indeterminate (?). Ratings were then summarised across each outcome measurement instrument (OMI), any inconsistencies were initially explored, if no cause could be found then inconsistencies were dealt with by removing studies of poor quality (Mokkink et al., 2024a). Content validity studies were rated based on criteria for relevance, comprehensiveness and comprehensibility. Relevance refers to the degree to which the items accurately reflect the construct and how appropriate they are to intended population and context. Comprehensiveness assesses if there are any missing concepts, and comprehensibility ensures the items are clear and appropriate (Mokkink et al., 2024a). For hypothesis testing for construct validity and responsiveness, authors prospectively developed hypothesis based on COSMIN guidelines and research by Mokkink et al (2021b) (see appendix F).

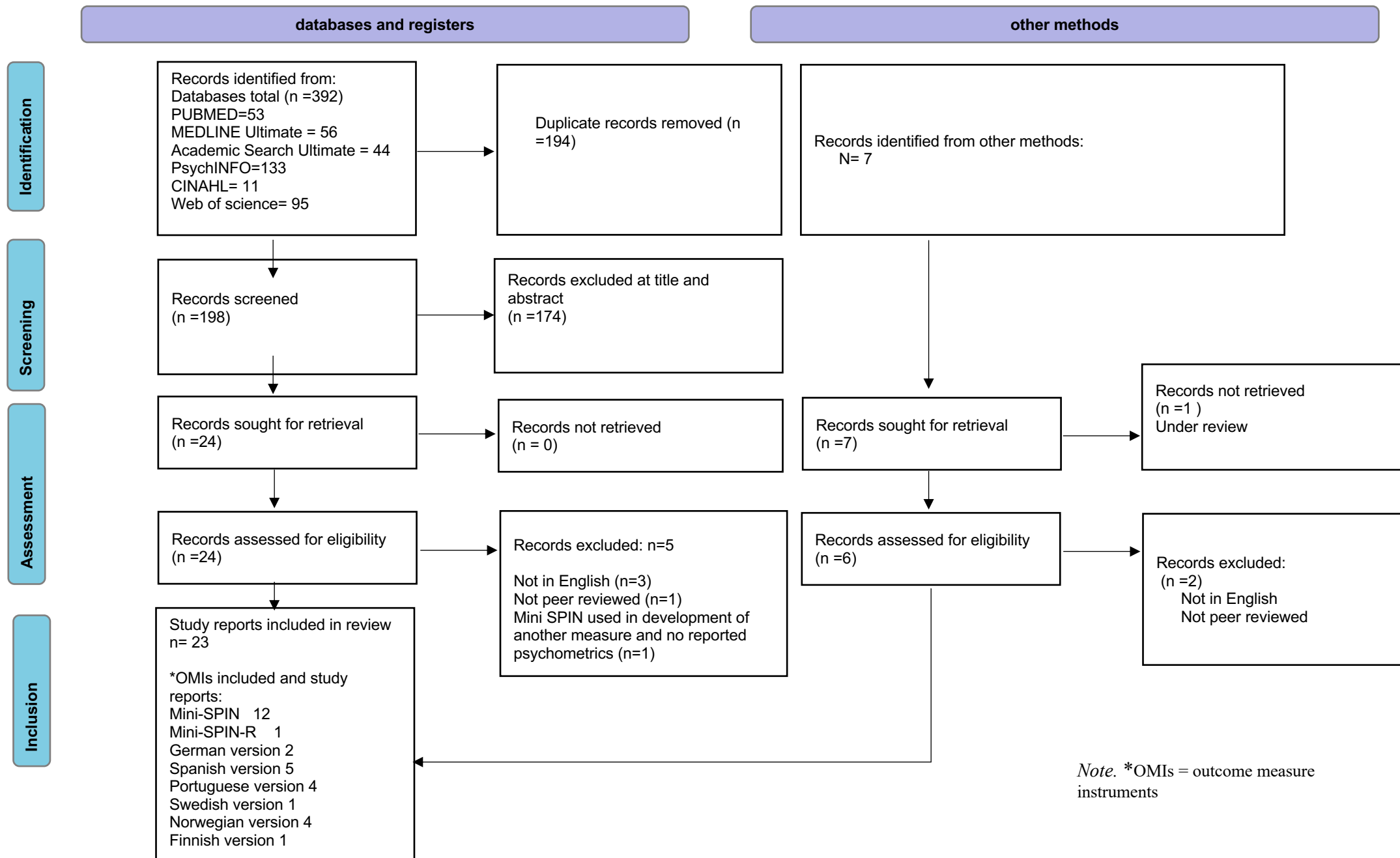
The pooled results for each measurement property were then provided with a Grading of Recommendations Assessment, Development, and Evaluation (GRADE) (Guyatt et al., 2011; Granholm et al., 2019), which rates the of quality of evidence obtained based on RoB, consistency and imprecision. The synthesised result for each measurement property per OMI was then given a rating of either high, moderate, low, or very low, unless the results were indeterminant in which case a GRADE rating was not required (Mokkink et al., 2024a). This review followed the COSMIN guidelines on GRADE for when to downgrade, such as in cases of poor sample size and inconsistencies (Appendix G). Each step of the process was done by AO and JH independently, any discrepancies were resolved through consultation with EC.

Results

Studies identified

A total of 392 studies were identified from electronic searches, after duplicates were removed 198 remained and were screened by title and abstract, leaving 24 for full text screening. A further seven articles were identified through other means, one of which was not available and two of which were excluded. This resulted in a final set of 23 papers for review, as seen in Figure 1 (see Appendix H for excluded study reports).

Figure 1 PRISMA diagram



Overview of study reports and studies

In total 23 study reports were included, finding eight OMIs: the Mini-SPIN (Connor et al., 2001), the Mini-SPIN-R (Aderka et al., 2013) and six language versions, see Table 1. In line with COSMIN guidelines and in the absence of retrieving any measurement invariance studies, all new versions of the Mini-SPIN were assessed as separate OMIs (Mokkink et al., 2024a).

PRISMA-COSMIN makes a distinction between study reports (journal articles) and studies (“the empirical investigation of a measurement property, with specific aim, design and analysis” (Elsman et al., 2024)), meaning that within each journal there may be multiple studies for different measurement properties. For an account of each study, demographics and RoB, see Appendix I. In total, there were 12 study reports assessing the psychometric properties of the Mini-SPIN (Connor et al, 2001), one for the Mini-SPIN-R (Aderka et al, 2013), four for the Norwegian version (Dahl & Dahl, 2010), one for the German version (Wiltink et al., 2017), one for the Swedish version (Mörtberg et al., 2019), two for the Portuguese version (de Lima Osório et al., 2007), two reports for the Spanish version (Garcia-Lopez & Moore, 2015) and one report for the Finnish version (Ranta et al., 2012). One report provided evaluation of both Mini-SPIN and Mini-SPIN R. Overall the reports contained 90 studies: four structural validity studies, 36 internal consistency studies, one cross cultural validity study, no measurement invariance studies, three reliability studies, no measurement error studies, 19 criterion validity studies, 25 hypotheses testing and three responsiveness studies.

The reports’ publication ranges from 2001 to 2024. Study reports were conducted across nine countries: Australia (n=6), The United States (n=6), Canada (n=3), Norway (n=4), Germany (n=1), Sweden (n=1), Brazil (n=2), Spain (n=2), Finland (n=1). For descriptive statistics of study reports see Table 2.

Most Mini-SPIN studies were conducted in adult (n=11) clinical samples, with only two assessing general community samples, one undergraduate sample and one assessing child and their caregivers. The Mini-SPIN-R and Norwegian version have only been assessed in adult clinical samples and the German version in adult clinical and community. The Swedish version has only been investigated in a student population and the Spanish and Finnish versions in adolescent school samples.

Table 1*Characteristics of included OMIs*

OMI	Reference	Language	Model	Construct	Clear origin of construct	Target population	Number of items	Recall time	Response options	Scoring algorithm
Mini- SPIN	Connor et al (2001)	English	Reflective	Generalised Social Anxiety	Yes	Adults	3	Past week	5-point Likert scale (0- 4)	Total score 0-12
Mini-SPIN R (revised)	Aderka et al (2013)	English	Reflective	Generalised Social Anxiety	Yes	Adults	3	Past week	5-point Likert scale (0- 4)	Total score 0-12
German version of the Mini- SPIN	Wiltink et al (2017)	German	Reflective	Generalised Social Anxiety	Yes	Adults	3	Past week	5-point Likert scale (0- 4)	Total score 0-12
Spanish version of	Garcia-Lopez & Moore (2015)	Spanish	Reflective	Generalised Social Anxiety	Yes	Adolescents	3	Past week	5-point Likert	Total score 0-12

the Mini- SPIN									scale (0-4)	
Swedish version of the Mini- SPIN	Mörtberg et al (2019)	Swedish	Reflective	Generalised Social Anxiety	Yes	Adults	3	Past week	5-point Likert scale (0-4)	Total score 0-12
Portuguese version of the Mini- SPIN	de Lima Osório et al (2007)	Portuguese	Reflective	Generalised Social Anxiety	Yes	Adults	3	Past week	5-point Likert scale (0-4)	Total score 0-12
Norwegian version of the Mini- SPIN	Dahl & Dahl (2010)	Norwegian	Reflective	Generalised Social Anxiety	Yes	Adults	3	Past week	5-point Likert scale (0-4)	Total score 0-12
Finnish version of the Mini- SPIN	Ranta et al (2012)	Finnish	Reflective	Generalised Social Anxiety	Yes	Adolescents	3	Past week	5-point Likert scale (0-4)	Total score 0-12

Note. Reflective = where items on the measure are thought to combine to reflect the construct of interest, OMI = outcome measurement instrument, construct = the theoretical concept that the Mini-SPIN is trying to measure

Table 2*General characteristics of included study reports*

OMI	Author	Study design and setting	Study population information	Age M(SD)	Gender % m/f	Sample size (n)	Administration	Psychometric property
Mini-SPIN	Connor et al. (2001)	United States Part one: placebo- controlled drug trials Part two: Managed healthcare organisation	Part one: Adult clinical patients and two control group. No other demographics reported Part two: 96% white. Mean education 14 years (SD 2.3). Median	Part one: not reported Part 2: 42.8(11.2)	Part one: not reported Part two: 32/68	Part one: 263 Part two: 1017	Self-report, paper copies	Criterion validity

	Cross-sectional study	income of \$25,000.					
Batterham et al. (2017)	Australia Online control trial	Adult general population sample (survey only): Clinical sample: 14.3% married, 62.2% single, 1% separated/divorced/widowed and 22.5% cohabiting. Education: 1.9% < high school, 3.6% four years of high school, 31.8% six years of high school, 48.8% bachelor's degree and 13.9% higher degree.	Survey only: 25.7(4.4) Clinical: 25.4(3.4)	Survey only: 30/70 Clinical: 24/76	Survey only: 10,633 Clinical: 1687	Self-report, paper copies	Structural validity Internal consistency Criterion validity Construct validity

		Employment: 58.6% employed full time, 28.4% part time, 7.1% unemployed and 5.9% not in the labour force.					
Seeley-Wait et al. (2009)	Australia, Macquarie University. Anxiety Research Unit. Control trial	Not reported	Clinical group 34.6 (10.0)	Clinical group 49/51	242	Self-report, paper copies	Internal consistency Reliability Criterion validity Construct validity Responsiveness
			nonclinical group 33.6 (11.2)	nonclinical 37/63			
Fogliati et al. (2016)	Australia (English), Macquarie University. Data from four randomised	Clinical participants from RCT. 25.8% single/ never married, 62.9% married and 11.3%	43 (11.38)	28.8/71.2	993	Self-report, Online completion	Internal consistency Reliability Criterion validity

		control trials on the efficacy of internet delivered treatment.	separated/ divorced/ widowed. Education 15.6% high school educated or less, 18.6% trade/ technical certificate, 65.8% diploma/ degree. In total 73% employed either full or part time, 5.6% students and 21% unemployed, retired or disabled.				Construct validity Responsiveness
Le Blanc et al. (2014)	United States seeking treatment groups. Adult anxiety clinic	SAD sample: 15.8% African American, 64.1% Caucasian, 2.8% Hispanic, 7.4%	SAD: 32.32 SD not reported non-SAD: 31.43 SD not reported	SAD sample: 56.6/42.5 0.9 missing. Non-SAD:	521 (SAD=435, non-SAD=86)	Self-report	Internal consistency Construct validity

	of Temple University and the anxiety disorders clinic of the university of Nebraska-Lincoln or the Anxiety Disorders Clinic of the new York state psychiatric institute.	Asian, 9.9% missing. Non-SAD sample 22.1% African American, 70.9% Caucasian, 1.2% Hispanic, 7.4% Asian, 9.9% missing.		Sample 45.3/54.7			
Sunderland et al. (2018)	Australia Single group equating design.	Adult community sample. Sample one: 12% education below high school, 13.9% high school,	Not reported	Sample 1: 20.4/79.6 Sample 2: 19.8/77.3	Sample 1: 3,175 Sample 2: 1052	Self-report, online completion	Internal consistency (Omega)

		50.1% degree/diploma, 23% higher degree. Sample 2: education 6.1% less than high school, 16.1 high school, 51.1% degree/ diploma, 26% higher degree					
Hathaway et al. (2024)	Australia (English). Randomised control anxiety treatment trial	Clinical samples from RCTS. Child combined: Oceanian (59.4%) North-west European (18.2%) Southern and Eastern Europe (5.9%)	Child: 9.29 (2.1) Caregiver: 42.6(5) Middle childhood: 8.66(1.4) Early adolescence:13.11(1.3)	52.2/47.8 9.1/90.9 51.5/48.5 56/44	695 703 544 91	Parents repot and child self- report, online completion	Internal consistency Criterion validity Construct validity

		North-East Asia (3.9%)					
Gordon and Heimberg (2011)	United States. Adult Anxiety Clinic at Temple	Treatment seeking sample: Caucasian (78%), African American (13%), Native American (2%), Pacific Islander (2%), and other (5%)	33.21(12.32)	44/56	129	Self-report	Internal consistency
Weeks et al. (2007).	United states. Treatment seeking sample who called adult anxiety clinic of temple seeking treatment	Adult treatment seeking sample. Eligible participants: European American (71%), African American (13.8%), Hispanic (2.3%), Asian (4.6%), other	Eligible participants: 29.3(11.41)	Eligible Participants: 48.1/51.9	291 total (135 Eligible Participants)	Interview	Internal consistency Criterion validity Construct validity

		(7.7%), 5 did not disclose.					
Mewton et al. (2014)	Australia. Treatment seeking sample. St. Vincent's Hospital, Sydney.	Adult treatment seeking sample. 38.4% were from a rural location	40.8(13.8)	39/61	635	Self-report	Internal consistency Responsiveness
Aderka et al. (2013)	United States and Canada. Treatment trial	Adult clinical sample. White (81.71%) African American (7.95%) Asian (9.34%) Hawaiian (0.40%) Native American (0.60%). Single (61.58%)	33.78(12.18)	62.12%/37.88%	569	Self-report	Internal consistency Construct validity

Married or
cohabiting
(29.08%)
Divorced or
separated (8.62%)
Widowed (0.72%).
Graduate school
(14.72%)
College graduate
(38.24%)
Partial college
(33.75%)
High school
graduate (9.34%)
Partial high school
(3.95%)

Carleton et al. (2010)	Canada. Clinical sample the Anxiety Treatment and	Clinical sample: post-secondary education (63%), high school (18%),	undergraduate sample men (M = 20.3; SD = 2.6) women (M = 20.1; SD = 3.3)	Undergraduate sample 22/78.	582	Self-report (paper and pen and web administration)	Criterion validity Construct validity
---------------------------	--	--	---	--------------------------------	-----	---	--

Research Centre at St. Joseph's Healthcare in Hamilton, Ontario. The University sample were from the University of Regina	Caucasian (91%), single (55%) or married (26%). University sample: Caucasian (87%) or Asian (6%), and single (81%) or married (13%).	Clinical 45.6/54.4
---	---	-----------------------

**Mini-
SPIN-R**

Aderka et al. (2013)	United States and Canada. Treatment trial	White (81.71%) African American (7.95%) Asian (9.34%) Hawaiian (0.40%) Native American (0.60%). Single (61.58%)	33.78(12.18)	62.12%/37.88%	569	Self-report	Internal consistency Construct validity
-------------------------	---	--	--------------	---------------	-----	-------------	--

Married or
cohabiting
(29.08%)
Divorced or
separated (8.62%)
Widowed (0.72%).
Graduate school
(14.72%)
College graduate
(38.24%)
Partial college
(33.75%)
High school
graduate (9.34%)
Partial high school
(3.95%)

**Norwegian
version of
the Mini-
SPIN**

Dahl. A and Dahl. C 2010	Norway. the Oslo Health study HUBRO study	Not married/cohabiting women (43%), men (57%). Low level of education (≤15 years) women (70%) men (64%). Not in paid work women (24%) men (22%). On disability pension women (10%) men (9%). Low annual income, woman (46%) men (32%).	Not reported	43.74/ 56.26	9523	Self-report, paper copies	Structural validity Internal consistency
Olsson and Dahl (2012)	Norway. the Oslo Health study HUBRO study. Control	Not married/cohabiting clinical (65%), non-clinical (50%).	Not reported	Not reported	1400	Self-report, paper copies	Structural validity Internal consistency

	group and clinical group	Low level of education: clinical (65%) nonclinical (45%). Not in paid work: Clinical (39%) nonclinical (13%). On disability pension: Clinical (29%), nonclinical (7%). Low annual income: clinical (53%), non- clinical (24). Low social class: Clinical (61%), nonclinical (40%).					
Dahl. C and Dahl. A (2010)	Norway. the Oslo Health study HUBRO study	Married/ cohabiting (65%), not married/ cohabiting (35),	Not reported	42/58	2230	Self-report, paper copies	Structural validity Internal consistency

**German
version of
the Mini-
SPIN**

			less than 15 years education (52%), greater than 15 years in education (48%). Full time/ part time work (88%), no work (12%).					
	Dahl and Olsson (2013)	Norway. the Oslo Health study HUBRO study	Percentages not reported	Not reported	Not reported	2710	Self-report, paper copies	Internal consistency
	Wiltink et al. (2017)	Germany. University Medical Centre.	Study 1(clinical sample): 61% cohabited. 48% high school education. 50%	Study 1: 38.5 (SD 13.2) Study 2: 48.8 (SD 18.2)	Study 1: 39/61 Study 2: 46/54	Study 1: 1254 Study 2: 1274	Self-report, paper copies	Internal consistency Cross cultural validity

were employed,
7.8% were on
pension, 19.5%
were unemployed.
94% of the
patients held
German
nationality.

Study 2
(Community
sample): 54%
were married, 61%
cohabited. 88%
had less than high
school education.
75% had a
household income
was higher than
Euro 1250 per
month. 33.33%

Construct
validity
Reliability

employed,
whereas 31% were
on pension and 6%
were unemployed.
97% held German
nationality.

Swedish version of the Mini- SPIN								
	Mortberg et al. (2018)	University of Stockholm	Students from the Department of Psychology, University of Stockholm, Sweden. No other important demographics reported	27.7 (7.5)	24/76	161	Self-report, online completion	Internal consistency Construct validity
Portuguese version of								

**the Mini-
SPIN**

Osório et al. (2010)	Brazil	University students. 78.9% were not working, 55.3% were private students, 60% were enrolled in biological sciences and most were 1 st or 2 nd years.	Total 21.41(3.3) Clinical sample 21.2 (2.7)	Total sample 44.2/55.8 Clinical sample 38.2/61.8	2314 Clinical sample: 178	Self-report, paper copies	Internal consistency Construct validity
		Clinical sample: 90% were not working alongside studying, 75.6% were public students, 54.3% were enrolled on a biological sciences					

**Spanish
version of
the Mini-
SPIN**

		course and typically 1 st or 2 nd years.					
de Lima Osório et al. (2007)	Brazil	Private and a public university in a city in the interior of the State of Sao Paulo-Brazil. Participants were enrolled on Exact, human or biological science courses.	21(2.83)	36.1/63.9	590	Self-report	Criterion validity
Garcia-Lopez and	Spanish schools	Study one: Participants from one private and	15.04 (1.33)	53.4/46.6	Study one: 573	Self-report, paper copies	Internal consistency

Moore (2015)		two public high schools	15.35 (1.20)	47.5/ 52.5	Study two: 354		Construct validity Criterion validity
		Study two: Adolescents (health and clinical samples)	SAD sample: 15.37 (1.17)	SAD sample: 37.4/62.6	SAD sample:147 Health controls: 207		
			Healthy controls: 15.34 (1.23)	Healthy controls: 54.6/45.4			
Garcia- Lopez et al. (2015)	Spanish Schools Private (12.7%) Public (87.3%)	In clinical sample 33% had co- morbidity with other anxiety disorder	overall sample 15.46(1.26)	clinical sample (n=421) 39.4/60.6	1034	Self-report	Criterion validity
Finnish version of the Mini- SPIN							
Ranta et al. (2012)	Finland, secondary	School population sample	14.7 (1.1)	50.3/49.7	22	Self-report, paper copies	Criterion validity

school
Ylöjärvi, in the
Tampere area
of Finland.

Note: OMI=outcome measurement instrument, SAD=Social anxiety disorder, SD= Standard deviation, M=mean, m=male, f=female, n=number,
RCTs= randomised control trials

Measurement properties

The measurement properties are reported in order of importance. Summarised result and GRADE can be found in Table 3.

Content validity

In total there were no studies for content validity for any of the OMIs. In an absence of concept elicitation, development studies or pilot tests, we were only able to rate content validity with reviewers' ratings (see Appendix J), therefore, all OMIs received a very low GRADE.

As none of the review team were familiar with the languages used in the non-English versions, in accordance with COSMIN guidelines it was not possible to rate the comprehensibility of the Mini-SPIN language versions. Therefore, all the language versions were given an overall rating of indeterminant. However, we were able to rate them on relevance and comprehensiveness as none of the language versions stated changes to item content. There was variability in the reporting of translation methods, the German version reported adequate methods for translation including forward and back with a team of clinical psychologists and reviewed by a consensus team. However, the Norwegian version stated that it met standards for translation, but no standards were reported.

For the Mini-SPIN and the Mini-SPIN-R reviewers rated them sufficient on relevance and comprehensibility, however, insufficient on comprehensiveness. The Mini-SPIN construct originates from the full-scale SPIN (Connor et al., 2000), which defines the construct of interest as generalised social anxiety. The SPIN has been found to load on to five factors, measured on three subscales: fear, avoidance and physiological symptoms (Connor et al., 2000). However, when assessing the item content of the Mini-SPIN and the Mini-SPIN-R reviewers felt that the items did not reflect all aspects of the concept, as there is not an item

assessing physiological symptoms, which would reflect factor three of the construct (Connor et al., 2000).

Internal structure (structural validity, internal consistency, cross-cultural validity/ measurement invariance and measurement error)

Overall, there was one structural validity study for the Mini-SPIN and three for the Norwegian version, both assessing adult community samples. Due to poor reporting of the confirmatory factor analysis fit indices despite using item response theory, it was not possible to determine the structural validity of the Mini-SPIN. The three structural validity studies for the Norwegian version were sufficient, all showing over 70% of variance loading on to one factor. However, the use of Principal Component Analysis (PCA) limits the results, hence they were downgraded (Mokkink et al., 2018; Mokkink et al., 2024a). Therefore, we did not find enough evidence to conclude even low-quality evidence of uni-dimensionality for the Mini-SPIN or its versions.

COSMIN states that structural validity is a prerequisite to internal consistency; therefore, the evidence of internal consistency cannot be greater than structural validity. Hence without evidence of uni-dimensionality, internal consistency could not be interpreted for any of the OMIs (Mokkink et al., 2018; Mokkink et al., 2024a). Many of the Cronbach alphas (α)/Omega values (ω) across the original Mini-SPIN (n=18), Mini-SPIN-R (n=1), Norwegian version (n=4), German version (n=2) were above threshold of .70, the one study for the Swedish version was not above threshold, and there was variability in Cronbach alphas across the Spanish and Portuguese versions. However, despite finding all studies across the OMI's rated "very good", we cannot conclude these studies to be sufficient reflection of the OMI's internal consistency.

There was only one cross cultural study found for the German version, which assessed an adult community sample and demonstrated high quality evidence of no important differences between age and gender.

Overall, there were no measurement invariance or measurement error studies.

Reliability

The original Mini-SPIN demonstrated consistent findings of test-retest reliability above .70 in adult clinical samples, providing evidence for good reliability, with one ‘very good’ study and the other doubtful due to some concern over the recall period. However, as there was at least one ‘very good’ study reliability for the Mini-SPIN was rated a High GRADE.

The German study did not demonstrate adequate reliability, with a score below .70. However, participants were not stable on the construct, due to undergoing treatment between repeated measures, meaning confidence in the results is poor.

Criterion validity

Pre-agreed gold standards including diagnostic interviews such as the Anxiety and Related Disorders Interview Schedule for DSM-IV (ADIS-5) were used as comparators (see Appendix K). Inconsistencies were noted for the Mini-SPIN and dealt with accordingly. The Mini-SPIN demonstrated consistent results of Area Under Curve (AUC) characteristic ranging from .72 -.97. It was not possible to determine the criterion validity of the German version due to poor reporting. The Portuguese version demonstrated good criterion with an AUC score for the receiver operator characteristic analysis of .81, however, confidence in Portuguese was limited due to scores of the Mini-SPIN being obtained from responses from the full SPIN, which may introduce bias (Mokkink et al., 2024a). The Spanish version demonstrated high quality evidence of good criterion validity with AUC consistently above

0.70. Finally, the Finnish version similarly reported results above threshold but was downgraded due to poor pooled sample size.

Construct validity

Results for hypotheses testing for construct validity yielded inconsistent results for the Mini-SPIN. After managing inconsistencies, only 37.5% (12/32) of the Mini-SPIN studies aligned with pre-defined hypotheses, demonstrating poor evidence for construct validity across methodologically sound studies.

Low quality evidence of poor construct validity was also found for the Mini-SPIN-R and the Swedish version, with more than 75% of the results deviating from our predefined hypotheses in poor quality studies.

However, Portuguese and Spanish version studies provided a greater quality of evidence, but they still demonstrated both OMIs as having poor construct validity. The German version did demonstrate some promising results with one good quality study demonstrating convergence of the German version to other social anxiety measures and some divergence from unrelated constructs. Additionally, the Finnish version demonstrated sufficient support for the pre-defined hypothesis, but the study was of lower quality.

Responsiveness

Studies on responsiveness were only found for the original Mini-SPIN in adult clinical samples. Results revealed high concordance with predefined hypotheses across methodologically “very good” studies, demonstrating the Mini-SPIN behaves similar to other social anxiety measures in its ability to detect change in the construct following an evidenced based intervention.

Table 3

Summarised results for quality of evidence per measurement property

	Mini-SPIN (Connor et al., 2001)		Mini-SPIN- R (Aderka et al., 2013)		Norwegian version (Dahl & Dahl, 2010)		German version (Wiltink et al., 2017)	
	Overall rating	Quality of evidence (GRADE)	Overall rating	Quality of evidence (GRADE)	Overall rating	Quality of evidence (GRADE)	Overall rating	Quality of evidence (GRADE)
	+/-/ ?	High, moderate, low, very low	+/-/ ?	High, moderate, low, very low	+/-/ ?	High, moderate, low, very low	+/-/ ?	High, moderate, low, very low
Content validity: Relevance	+	Very Low	+	Very Low	+	Very Low	+	Very Low
Content validity: Comprehensiveness	-	Very Low	-	Very Low	-	Very Low	-	Very Low
Content validity: Comprehensibility	+	Very Low	+	Very Low	?	Very Low	?	Very Low

Content Validity rating total	±	Very Low	±	Very Low	?	Very Low	?	Very Low
Structural validity	?	n/a	No Studies	n/a	+	Moderate	No Studies	n/a
Internal consistency	?	n/a	?	n/a	?	n/a	?	n/a
Cross cultural validity	No studies	n/a	No studies	n//a	No studies	n//a	+	High
Reliability	+	High	No studies	n//a	No studies	n//a	-	Very low
Criterion validity	+	Moderate	No studies	n//a	No studies	n//a	?	n/a
Construct validity	-	Moderate	-	Low	No studies	n//a	+	High
Responsiveness	+	High	No studies	n//a	No studies	n//a	No Studies	n/a

	Spanish version (Garcia-Lopez & Moore, 2015)		Swedish version (Mörtberg et al., 2019),		Portuguese version (de Lima Osório et al., 2007)		Finnish version (Ranta et al., 2012).	
	Overall rating	Quality of evidence (GRADE)	Overall rating	Quality of evidence (GRADE)	Overall rating	Quality of evidence (GRADE)	Overall rating	Quality of evidence (GRADE)
	+/-/ ?	High, moderate, low, very low	+/-/ ?	High, moderate, low, very low	+/-/ ?	High, moderate, low, very low	+/-/ ?	High, moderate, low, very low
Content validity: Relevance	+	Very Low	+	Very Low	+	Very Low	+	Very Low
Content validity: Comprehensiveness	-	Very Low	-	Very Low	-	Very Low	-	Very Low
Content validity: Comprehensibility	?	Very Low	?	Very Low	?	Very Low	?	Very Low
Content Validity rating total	?	Very Low	?	Very Low	?	Very Low	?	Very Low

Structural validity	No Studies	n/a	No Studies	n/a	No Studies	n/a	No Studies	n/a
Internal consistency	?	n/a	?	n/a	?	n/a	No Studies	n/a
Cross cultural validity	No Studies	n/a	No Studies	n/a	No Studies	n/a	No Studies	n/a
Reliability	No Studies	n/a	No Studies	n/a	No Studies	n/a	No Studies	n/a
Criterion validity	+	High	No Studies	n/a	+	Low	+	Very low
Construct validity	-	High	-	Low	-	Moderate	No Studies	n/a
Responsiveness	No Studies	n/a	No Studies	n/a	No Studies	n/a	No Studies	n/a

Recommendations:

The following recommendations are reported in line with COSMIN guidelines (Mokkink et al., 2024a; Mokkink et al., 2024b)

- At this time the Mini-SPIN, Mini-SPIN-R and all six identified language versions cannot be recommended for use due to no evidence of content validity. Hence future research should endeavour to evaluate the content validity of the Mini-SPIN.
- The Mini-SPIN and its versions would also benefit from further exploration into the internal structure to determine dimensionality and the latent construct, through robust statistical assessments such as Confirmatory Factor Analysis (CFA) or Exploratory Factor Analysis (EFA). These methods should be used together, EFA may be initially preferred as there is not strong evidence for the number of common factors, therefore, EFA will allow for identification of number of latent constructs and correlations among variables. Following that a CFA would be helpful as it can help reaffirm through specific testing (Fabrigar et al., 1999).
- Measurement invariance studies are also recommended due to language and cultural variation, and to properly assess whether the language versions perform similarly to the original Mini-SPIN.

Discussion

This review found that all versions of the Mini-SPIN were limited by the absence of content validity studies and minimal structural validity studies, hence, we were unable to determine the concepts or dimensionality for the measures. Therefore, in answer to our first research question, we found a lack of evidence that the Mini-SPIN and its versions are psychometrically robust (reliable, valid and responsive) measures for social anxiety across

the life span, and when assessed against COSMIN standards they cannot be considered psychometrically robust.

Along with the absence of content validity studies, this review highlighted a potential gap in the comprehensibility of the Mini-SPIN and Mini-SPIN-R, due to missing items assessing physiological symptoms which supports factor three of the original SPIN construct (Connor et al., 2000). However, without evidence from content validity studies, we must exercise caution as these are subjective ratings. There may also be limitations in assessing content validity for the Mini-SPIN from the original measure, as the original SPIN's five factor structure was initially determined through Principal Component Analysis (PCA)(Connor et al., 2000), which may not be the most appropriate method for determining latent constructs (Fabrigar et al., 1999; Gruijters, 2019). Additionally, to our knowledge there is no concept elicitation study to support the five-factor model initially proposed (Connors et al., 2000), therefore, it may be that the content validity of the SPIN is also limited. The findings of no content validity from this review contradict conclusions reached by Modini (2015), who concluded that the Mini-SPIN did display adequate content validity as it originated from the SPIN (Connor et al., 2000). Therefore, it will be important for the concepts of the Mini-SPIN to be explored independently from the SPIN to allow for more robust support of the content validity.

The lack of content validity studies found in this review may reflect a wider challenge with the development of abbreviated measures. As with the Mini-SPIN, many shorter measures are developed from their longer counterparts and therefore will not have undergone concept elicitation or pilot testing. Unfortunately, there is an absence of COSMIN guidance on the evaluation of abbreviated measures developed in this way, meaning that abbreviated measures will inherently have poorer quality of evidence for content validity using the COSMIN standards, which then has implications on recommendations for use. It is also

important to note, that both the SPIN and the Mini-SPIN predate the COSMIN guidelines, where standards for adequate OMI development have improved.

Although COSMIN state without content validity the assessment of other properties is not required, we felt that it was important to assess all psychometric properties to inform future research. This review identified gaps in our understanding of the internal structure of the Mini-SPIN and its versions, limiting our ability to determine dimensionality.

Unfortunately, the structural validity studies retrieved in this review are limited by PCA. Research has cautioned against using PCA when determining latent constructs, as it does not distinguish between common and unique variance, hence may not be detecting latent variables, so it may not be best for assessing psychological measures (Fabrigar et al., 1999; Gruijters, 2019). In addition, two Norwegian structural validity studies found in this review also applied a forced two factor model which accounted for a greater portion of variance, this may suggest that there are multiple factors; however, they did not explain whether the factors were theoretically distinct concepts. These results challenged our ability to reliably determine dimensionality of the OMIs. Hence, we could not confidently conclude if the Mini-SPIN or its versions reflected a unidimensional construct. Therefore, despite finding some positive results for internal consistency, the lack of evidence confirming uni-dimensionality meant it was not possible for us to evaluate them, this finding is consistent with Modini (2015).

There may be some theoretical understanding to suggest uni-dimensionality in the Mini-SPIN capturing an overall social anxiety “trait”, as research has highlighted how measures with a small number of items may suffer “construct deficiency” due to limited opportunity to assess more complex constructs (Credé et al., 2012). In addition, research has also argued that dimensionality can be determined through consideration of theoretical and empirical testing (Hagell, 2014), therefore, it could be said that there is some theoretical evidence of uni-dimensionality for the Mini-SPIN. However, this review chose to action

caution before concluding uni-dimensionality due to finding limited structural validity studies. Therefore, all studies on structural validity require updating through enhancement of statistical methods and improved reporting to comply with COSMIN guidelines.

In answer to our second research question, ‘What populations has the Mini-SPIN been validated in and have clinical populations been assessed?’, we found some evidence for criterion validity for the original Mini-SPIN and Portuguese version within adult clinical samples, and the Spanish and Finnish versions within adolescent samples. Overall, generally the Mini-SPIN has been evaluated within adult clinical samples, therefore, some results may not be generalisable to other populations. Regarding our second research question, ‘Are there any cross-cultural validation studies?’, we found one cross-cultural study for the German version in an adult community sample but no measurement invariance studies; therefore, it was not possible to determine cross-cultural validity.

Moreover, although many of the translated versions report no changes to item content, we cannot assume they function identically to the original Mini-SPIN. The original Mini-SPIN reflects a Western conceptualisation of social anxiety, and due to cultural diversity in how social anxiety is understood, as well as differences in beliefs and norms, the interpretation of the questions may vary across cultures. Additionally, nuances in languages may also affect interpretations; as such, the translation of items may not always capture the original meaning. However, without high-quality measurement invariance studies that can assess both similarities and differences between the language versions, we must exercise caution before concluding the translated versions are equivalent to the original Mini-SPIN.

We also found no measurement error studies, which poses a significant consideration as small item measures like the Mini-SPIN are subject to a greater chance of measurement error (Segars, 1997), future research should investigate this further. Additionally, there was

very limited reliability and responsiveness studies, therefore, our understanding of the measurement properties of the Mini-SPIN and its versions is still incomplete.

Strengths and Limitations

Conclusions reached in this review should be considered within the context of the review's strengths and limitations. The use of validated search filters and a comprehensive search of the literature across six databases and manual citation searching is a strength of this study. Additionally, this review follows the updated criteria and standards set by COSMIN which enhances the comparability, transparency and ensures a robust assessment of included studies (Mokkink et al., 2024a). This study also demonstrates strength using two independent raters during screening, data extraction, RoB, assessing measurement properties and synthesis. This study also demonstrated good inter-rater reliability, and all differences were met through discussion.

Some limitations include possible restriction of the eligibility criteria. By only including studies which mentioned assessing psychometric properties in abstract, we may potentially have missed studies in which properties like internal consistency were assessed as part of a wider treatment trial. This, therefore, has potential implications on the robustness of the review and highlights wider systemic issues relating to the poor tagging of papers assessing psychometrics. Although the use of validated search filters may combat some of this by increasing search sensitivity (Terwee et al., 2009), we cannot be sure all relevant studies were captured. Additionally, the inability to include study reports in other languages also possibly reduces the cross-cultural comprehensibility of this review especially given we found six language versions.

There may also be limitations in methods used to assess responsiveness and hypotheses testing, such as assessing responsiveness through distribution-based methods and calculation of standard error of measurement (SEM) using test-retest reliability.

Unfortunately, this meant that we had to exclude studies where there was not enough information for us to calculate SEM. Moreover, for construct validity we defined our convergent hypothesis with other social anxiety measures to be correlated $>.70$, following previous research (Abma et al., 2016). Due to the lack of content validity, we decided to hold the OMIs to higher standards for convergence to provide stronger evidence of correlation to the construct of social anxiety. Therefore, it may be that with slightly lower correlations that were still strong we would have found more evidence for convergent validity. As COSMIN guidelines requires the review team to develop their own hypotheses as well as other subjective judgements throughout, to aid in transparency all rationales for hypothesis, decisions for RoB and extracted data can be found in appendix (F, I, L, respectively).

Another limitation comes from the application of COSMIN standards to abbreviated measures. Due to the development trajectory of abbreviated measures deviating from measures developed from scratch, these standards might not be directly applicable and may unfairly disadvantage brief measures developed from longer versions rather than through typical PROM development studies.

This review also highlighted reoccurring limitations of the included studies such as poor reporting of results, poor reporting of sample demographics and often administering the SPIN and then deriving scores for the Mini-SPIN. As the SPIN is an entirely different measure, this could have introduced bias (Mokkink et al., 2024a), and as highlighted by previous research item order effects and previous questions adds additional context which could impact responses (Weinberger et al., 2006). Therefore, future research should endeavour to administer the Mini-SPIN when assessing its psychometric properties.

Implications

This review identified several major gaps in the development and understanding of the measurement properties of the Mini-SPIN and further investigations are required to fill in

this gap. Additionally, research should endeavour to enhance the content validity of measures, and ensure the appropriate statistical tests used to assess psychometrics are in accordance with COSMIN standards. Moreover, researchers should aim to increase reporting of findings as well as improve general tagging of studies on psychometrics. Finally, this review has implications for the Mini-SPIN clinically as COSMIN guidance would suggest that its use should be discouraged until further research has been conducted.

Funding: None

Declaration of competing interests: None.

Acknowledgments: UEA librarian for her help in developing the search strategy

Availability of data: Study data available from the authors upon request.

References

- Abma, I. L., Rovers, M., & van der Wees, P. J., 2016. Appraising convergent validity of patient-reported outcome measures in systematic reviews: constructing hypotheses and interpreting outcomes. *BMC Res. notes.* 9(226), 1-5.
<https://doi.org/10.1186/s13104-016-2034-2>
- Aderka, I. M., Pollack, M. H., Simon, N. M., Smits, J. A., Van Ameringen, M., Stein, M. B., & Hofmann, S. G., 2013. Development of a brief version of the social phobia inventory using item response theory: the mini-SPIN-R. *Behav. Ther.* 44(4), 651-661. <https://doi.org/10.1016/j.beth.2013.04.011>
- Antony, M. M., Coons, M. J., McCabe, R. E., Ashbaugh, A., & Swinson, R. P., 2006. Psychometric properties of the social phobia inventory: Further evaluation. *Behav. Res. Ther.*, 44(8), 1177-1185. <https://doi.org/10.1016/j.brat.2005.08.013>
- Barrera, T. L., & Norton, P. J., 2009. Quality of life impairment in generalized anxiety disorder, social phobia, and panic disorder. *J. anxiety disord.* 23(8), 1086-1090.
<https://doi.org/10.1016/j.janxdis.2009.07.011>
- Batterham, P. J., Mackinnon, A. J., & Christensen, H., 2017. Community-based validation of the social phobia screener (SOPHS). *Assess*, 24(7), 958-969.
<https://doi.org/10.1177/1073191116636448>
- Beidel, D. C., Turner, S. M., & Morris, T. L., 1995. A new inventory to assess childhood social anxiety and phobia: The Social Phobia and Anxiety Inventory for Children. *Psychological assess.* 7(1), 73-79. <https://doi.org/10.1037/1040-3590.7.1.73>
- Carleton, R. N., Collimore, K. C., Asmundson, G. J., McCabe, R. E., Rowa, K., & Antony, M. M., 2010. SPINning factors: Factor analytic evaluation of the Social Phobia

- Inventory in clinical and nonclinical undergraduate samples. *J. Anxiety Disord*, 24(1), 94-101. <https://doi.org/10.1016/j.janxdis.2009.09.003>
- Carlson, E. B., Smith, S. R., Palmieri, P. A., Dalenberg, C., Ruzek, J. I., Kimerling, R., ... & Spain, D. A., 2011. Development and validation of a brief self-report measure of trauma exposure: the Trauma History Screen. *Psychol. Assess.*, 23(2), 463-477.
- Chartier, M. J., Walker, J. R., & Stein, M. B., 2003. Considering comorbidity in social phobia. *Soc. Psychiatry Psychiatr. Epidemiol*, 38, 728-734.
<https://doi.org/10.1007/s00127-003-0720-6>
- Connor, K. M., Davidson, J. R., Churchill, L. E., Sherwood, A., Weisler, R. H., & Foa, E., 2000. Psychometric properties of the Social Phobia Inventory (SPIN): New self-rating scale. *Br. J. Psychiatry*, 176(4), 379-386.
<https://doi.org/10.1192/bjp.176.4.379>
- Connor, K. M., Kobak, K. A., Churchill, L. E., Katzelnick, D., & Davidson, J. R., 2001. Mini-SPIN: A brief screening assessment for generalized social anxiety disorder. *Depress. Anxiety*, 14(2), 137-140. <https://doi.org/10.1002/da.1055>
- Credé, M., Harms, P., Niehorster, S., & Gaye-Valentine, A., 2012. An evaluation of the consequences of using short measures of the Big Five personality traits. *J. Pers. Soc. Psychol.* 102(4), 874-888. <https://doi.org/10.1037/a0027403>
- Dahl, A. A., & Dahl, C. F., 2010. Are there gender differences in impairment associated with high social anxiety? A community-based study. *J. Anxiety Disord*, 24(5), 487-493. <https://doi.org/10.1016/j.janxdis.2010.03.005>
- Dahl, A. A., & Olsson, I., 2013. Unfavorable health conditions associated with high social anxiety in the elderly: a community-based study. *Nord. J. Psychiatry*, 67(1), 30-37.
<https://doi.org/10.3109/08039488.2012.668935>

- de Lima Osório, F., Crippa, J. A., & Loureiro, S. R., 2007. A study of the discriminative validity of a screening tool (MINI-SPIN) for social anxiety disorder applied to Brazilian university students. *Eur. Psychiatry*, 22(4), 239-243.
<https://doi.org/10.1016/j.eurpsy.2007.01.003>
- Devlin, N. J., & Appleby, J., 2010. Getting the most out of PROMs. Putting health outcomes at the heart of NHS decision-making. London: The King's Fund
- Elsman, E. B. M., Mokkink, L. B., Terwee, C. B., Beaton, D., Gagnier, J. J., Tricco, A. C., Baba, A., Butcher, N. J., Smith, M., Hofstetter, C., Lee Aiyegbusi, O., Berardi, A., Farmer, J., Haywood, K. L., Krause, K. R., Markham, S., Mayo-Wilson, E., Mehdipour, A., Ricketts, J., Szatmari, P., ... Offringa, M., 2024. Guideline for reporting systematic reviews of outcome measurement instruments (OMIs): PRISMA-COSMIN for OMIs 2024. *J. Clin. Epidemiol*, 173, 111422.
<https://doi.org/10.1016/j.jclinepi.2024.111422>
- Elsman, E. B., Mokkink, L. B., Langendoen-Gort, M., Rutters, F., Beulens, J., Elders, P. J., & Terwee, C. B., 2022. Systematic review on the measurement properties of diabetes-specific patient-reported outcome measures (PROMs) for measuring physical functioning in people with type 2 diabetes. *BMJ Open Diabetes Res. Care*, 10(3), e002729.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J., 1999. Evaluating the use of exploratory factor analysis in psychological research. *Psychol. Methods*, 4(3), 272-299.
- Falk Dahl, C. A., & Dahl, A. A., 2010. Lifestyle and social network in individuals with high level of social phobia/anxiety symptoms: a community-based study *Soc. Psychiatry Psychiatr. Epidemiol*, 45, 309-317. <https://doi.org/10.1007/s00127-009-0069-6>

- Fogliati, V. J., Terides, M. D., Gandy, M., Staples, L. G., Johnston, L., Karin, E., ... & Dear, B. F., 2016. Psychometric properties of the mini-social phobia inventory (Mini-SPIN) in a large online treatment-seeking sample. *Cogn. Behav. Ther*, 45(3), 236-257. <https://doi.org/10.1080/16506073.2016.1158206>
- Franceschini, M., Boffa, A., Pignotti, E., Andriolo, L., Zaffagnini, S., & Filardo, G., 2023. The minimal clinically important difference changes greatly based on the different calculation methods. *Am. J. Sports Med.* 51(4), 1067-1073.
<https://doi.org/10.1177/03635465231152484>
- García-López, L. J., Olivares, J., Hidalgo, M. D., Beidel, D. C., & Turner, S. M., 2001. Psychometric properties of the social phobia and anxiety inventory, the Social Anxiety Scale for Adolescents, the Fear of Negative Evaluation Scale, and the Social Avoidance and Distress Scale in an adolescent Spanish-speaking sample. *J. Psychopathol. Behav. Assess.*, 23, 51-59.
<https://doi.org/10.1023/A:1011043607878>
- Garcia-Lopez, L. J., Sáez-Castillo, A. J., Beidel, D., & La Greca, A. M., 2015. Brief measures to screen for social anxiety in adolescents. *J. Dev. Behav. Pediatr*, 36(8), 562-568. <https://doi.org/10.1097/DBP.0000000000000213>
- Garcia-Lopez, L.J., & Moore, H. T., 2015. Validation and diagnostic efficiency of the mini-SPIN in Spanish-speaking adolescents. *PLoS One*, 10(8).
<https://doi.org/10.1371/journal.pone.0135862>
- Gordon, D., & Heimberg, R. G., 2011. Reliability and validity of DSM-IV generalized anxiety disorder features. *J. Anxiety Disord*, 25(6), 813-821.
<https://doi.org/10.1016/j.janxdis.2011.04.001>

- Granhölm, A., Alhazzani, W., & Möller, M. H., 2019. Use of the GRADE approach in systematic reviews and guidelines. *Br. J. Anaesth.* 123(5), 554-559.
<https://doi.org/10.1016/j.bja.2019.08.015>
- Gruijters, S. L., 2019. Using principal component analysis to validate psychological scales: Bad statistical habits we should have broken yesterday II. *Eur. Health Psychol.*, 20(5), 544-549.
- Guyatt, G., Oxman, A. D., Akl, E. A., Kunz, R., Vist, G., Brozek, J., ... & Schünemann, H. J., 2011. GRADE guidelines: 1. Introduction—GRADE evidence profiles and summary of findings tables. *J. Clin. Epidemiol.* 64(4), 383-394.
<https://doi.org/10.1016/j.jclinepi.2010.04.026>
- Hagell, P., 2014. Testing rating scale unidimensionality using the principal component analysis (PCA)/t-test protocol with the Rasch model: The primacy of theory over statistics. *Open J. Stat.*, 4(6), 456-465. <https://doi.org/10.4236/ojs.2014.46044>
- Hathway, T., McLellan, L. F., Dear, B. F., Trompeter, N., Carl, T., Wuthrich, V., ... & Rapee, R. M., 2024. The psychometric properties of the Mini Social Phobia Inventory in a treatment seeking sample of children and their caregivers. *Cogn. Behav. Ther.* 54(2), 171-189. <https://doi.org/10.1080/16506073.2024.2397673>
- Heimberg, R. G., Horner, K. J., Juster, H. R., Safren, S. A., Brown, E. J., Schneier, F. R., & Liebowitz, M. R., 1999. Psychometric properties of the Liebowitz social anxiety scale. *Psychological medicine*, 29(1), 199-212.
<https://doi.org/10.1017/S0033291798007879>
- Heiser, N. A., Turner, S. M., Beidel, D. C., & Roberson-Nay, R., 2009. Differentiating social phobia from shyness. *J. Anxiety Disord.* 23(4), 469-476.
<https://doi.org/10.1016/j.janxdis.2008.10.002>

- Hinde, S., & Spackman, E., 2015. Bidirectional citation searching to completion: an exploration of literature searching methods. *Pharmacoeconomics*. 33(1), 5-11.
<https://doi.org/10.1007/s40273-014-0205-3>
- Holmes, M. M., Lewith, G., Newell, D., Field, J., & Bishop, F. L., 2017. The impact of patient-reported outcome measures in clinical practice for pain: a systematic review. *Qual. Life Res.* 26(1), 245-257. <https://doi.org/10.1007/s11136-016-1449-5>
- Katzelnick, D. J., & Greist, J. H., 2001. Social anxiety disorder: an unrecognized problem in primary care. *J. Clin. Psychiatry*. 62(1), 11-16.
- Kaufman, J., Birmaher, B., Brent, D., Rao, U. M. A., Flynn, C., Moreci, P., ... & Ryan, N., 1997. Schedule for affective disorders and schizophrenia for school-age children-present and lifetime version (K-SADS-PL): initial reliability and validity data. *J. Am. Acad. Child Adolesc. Psychiatry*. 36(7), 980-988.
<https://doi.org/10.1097/00004583-199707000-00021>
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E., 2005. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch. Gen. Psychiatry*. 62(6), 593-602. <https://doi.org/10.1001/archpsyc.62.6.593>
- Khalid-Khan, S., Santibanez, M. P., McMicken, C., & Rynn, M. A., 2007. Social anxiety disorder in children and adolescents: Epidemiology, diagnosis, and treatment. *Pediatr. Drugs*, 9, 227-237. <https://doi.org/10.2165/00148581-200709040-00004>
- Kindred, R., Bates, G. W., & McBride, N. L., 2022. Long-term outcomes of cognitive behavioural therapy for social anxiety disorder: A meta-analysis of randomised controlled trials. *J. Anxiety Disord.* 92, 102640.
<https://doi.org/10.1016/j.janxdis.2022.102640>

- Le Blanc, A. L., Bruce, L. C., Heimberg, R. G., Hope, D. A., Blanco, C., Schneier, F. R., & Liebowitz, M. R., 2014. Evaluation of the psychometric properties of two short forms of the social interaction anxiety scale and the social phobia scale. *Assess*, 21(3), 312-323. <https://doi.org/10.1177/1073191114521279>
- Letamendi, A. M., Chavira, D. A., & Stein, M. B., 2009. Issues in the assessment of social phobia: a review. *Isr. J. Psychiatry Relat. Sci.* 46(1), 13-24.
- Lochner, C., Mogotsi, M., du Toit, P. L., Kaminer, D., Niehaus, D. J., & Stein, D. J., 2003. Quality of life in anxiety disorders: a comparison of obsessive-compulsive disorder, social anxiety disorder, and panic disorder. *Psychopathology*. 36(5), 255-262. <https://doi.org/10.1159/000073451>
- Mewton, L., Hobbs, M. J., Sunderland, M., Newby, J., & Andrews, G., 2014. Reductions in the internalising construct following internet-delivered treatment for anxiety and depression in primary care. *Behav. Res. Ther*, 63, 132-138. <https://doi.org/10.1016/j.brat.2014.10.001>
- Modini, M., Abbott, M. J., & Hunt, C., 2015. A systematic review of the psychometric properties of trait social anxiety self-report measures. *J. Psychopathol. Behav. Assess*, 37, 645-662. <https://doi.org/10.1007/s10862-015-9483-0>
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group*, T., 2009. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Ann. Intern. Med.*, 151(4), 264-269
- Mokkink, L. B., Elsmann, E. B. M., & Terwee, C. B., 2024. COSMIN guideline for systematic reviews of patient-reported outcome measures version 2.0. *Qual. Life Res.*, 33, Article 37. <https://doi.org/10.1007/s11136-024-03761-6>
- Mokkink, L. B., Boers, M., van der Vleuten, C., Patrick, D. L., Alonso, J., Bouter, L. M., ... & Terwee, C. B., 2021. COSMIN risk of bias tool to assess the quality of studies

- on reliability and measurement error of outcome measurement instrument. BMC Med Res Methodol. 1, 293. Retrieved from: https://www.cosmin.nl/wp-content/uploads/user-manual-COSMIN-Risk-of-Bias-tool_v4_JAN_final.pdf
- Mokkink, L. B., Boers, M., Van Der Vleuten, C. P. M., Bouter, L. M., Alonso, J., Patrick, D. L., ... & Terwee, C. B., 2020. COSMIN Risk of Bias tool to assess the quality of studies on reliability or measurement error of outcome measurement instruments: a Delphi study. BMC Med. Res. Methodol. 20(293), 1-13.
<https://doi.org/10.1186/s12874-020-01179-5>
- Mokkink, L. B., De Vet, H. C., Prinsen, C. A., Patrick, D. L., Alonso, J., Bouter, L. M., & Terwee, C. B., 2018. COSMIN risk of bias checklist for systematic reviews of patient-reported outcome measures. Qual. Life Res. 27(5), 1171-1179
<https://doi.org/10.1007/s11136-017-1765-4>
- Mokkink, L. B., Elsmann, E. B., & Terwee, C. B., 2024. COSMIN guideline for systematic reviews of patient-reported outcome measures version 2.0. Qual. Life Res. 33(11), 2929-2939. <https://doi.org/10.1007/s11136-024-03761-6>
- Mokkink, L., Terwee, C., & de Vet, H., 2021. Key concepts in clinical epidemiology: responsiveness, the longitudinal aspect of validity. J. Clin. Epidemiol. 140, 159-162. <https://doi.org/10.1016/j.jclinepi.2021.06.002>
- Mörtberg, E., & Jansson Fröjmark, M., 2019. Psychometric evaluation of the social phobia inventory and the mini-social phobia inventory in a Swedish university student sample. Psychol. Rep, 122(1), 323-339.
<https://doi.org/10.1177/0033294118755097>
- NICE., 2013. Social anxiety disorder: recognition, assessment and treatment. National Institute for Health Care Excellence.

<https://www.nice.org.uk/guidance/cg159/resources/social-anxiety-disorder-pdf-246100650181>

Norman, G. R., Sloan, J. A., & Wywich, K. W., 2003. Interpretation of changes in health-related quality of life: the remarkable universality of half a standard deviation. *Med. Care.* 41(5), 582-592.

<https://doi.org/10.1097/01.MLR.0000062554.74615.4C>

Olfson, M., Guardino, M., Struening, E., Schneier, F. R., Hellman, F., & Klein, D. F., 2000. Barriers to the treatment of social anxiety. *Am. J. Psychiatry.* 157(4), 521-527. <https://doi.org/10.1176/appi.ajp.157.4.521>

Olsson, I., & Dahl, A. A., 2012. Avoidant personality problems—their association with somatic and mental health, lifestyle, and social network. A community-based study. *Compr. Psychiatry,* 53(6), 813-821.

<https://doi.org/10.1016/j.comppsy.2011.10.007>

Osório, F. D. L., Crippa, J. A. S., & Loureiro, S. R., 2010. Further study of the psychometric qualities of a brief screening tool for social phobia (MINI-SPIN) applied to clinical and nonclinical samples. *Perspect. Psychiatr. Care,* 46(4), 266-278. <https://doi.org/10.1111/j.1744-6163.2010.00261.x>

Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A., 2016. Rayyan — a web and mobile app for systematic reviews. *Syst. Rev.,* 5(210), 1-5. doi 10.1186/s13643-016-0384-4.

Ranta, K., Kaltiala-Heino, R., Rantanen, P., & Marttunen, M., 2012. The Mini-Social Phobia Inventory: psychometric properties in an adolescent general population sample. *Compre. Psychiatry,* 53(5), 630-637.

<https://doi.org/10.1016/j.comppsy.2011.07.007>

- Robins, R. W., Hendin, H. M., & Trzesniewski, K. H., 2001. Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Pers. Soc. Psychol. Bull.*, 27(2), 151-161.
<https://doi.org/10.1177/0146167201272002>
- Rodebaugh, T. L., Woods, C. M., Thissen, D. M., Heimberg, R. G., Chambless, D. L., & Rapee, R. M., 2004. More information from fewer questions: the factor structure and item properties of the original and brief fear of negative evaluation scale. *Psychol. Assess.* 16(2), 169. <https://doi.org/10.1037/1040-3590.16.2.169>
- Rose, G. M., & Tadi, P., 2022. Social anxiety disorder. In StatPearls [Internet]. StatPearls Publishing.
- Schmidt, F. L., Le, H., & Ilies, R., 2003. Beyond alpha: An empirical examination of the effects of different sources of measurement error on reliability estimates for measures of individual-differences constructs. *Psycholo. Methods.* 8(2), 206-224.
<https://doi.org/10.1037/1082-989X.8.2.206>
- Sedaghat, A. R., 2019. Understanding the minimal clinically important difference (MCID) of patient-reported outcome measures. *Otolaryngol. Head Neck Surg.* 161(4), 551-560. <https://doi.org/10.1177/0194599819852604>
- Seeley-Wait, E., Abbott, M. J., & Rapee, R. M., 2009. Psychometric properties of the mini-social phobia inventory. *Prim. Care Companion*, 11(5), 231-236.
- Segars, A. H., 1997. Assessing the unidimensionality of measurement: A paradigm and illustration within the context of information systems research. *Omega*, 25(1), 107-121. [https://doi.org/10.1016/S0305-0483\(96\)00051-5](https://doi.org/10.1016/S0305-0483(96)00051-5)
- Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., ... & Dunbar, G. C., 1998. The Mini-International Neuropsychiatric Interview (MINI):

- the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J. Clin. Psychiatry*. 59(20), 22-33.
- Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B., 2006. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of internal medicine*, 166(10), 1092-1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Sunderland, M., Batterham, P., Caelear, A., Carragher, N., Baillie, A., & Slade, T., 2018. High agreement was obtained across scores from multiple equated scales for social anxiety disorder using item response theory. *J. Clin. Epidemiol*, 99, 132-143. <https://doi.org/10.1016/j.jclinepi.2018.04.003>
- Terwee, C. B., & Prinsen, C. A. C., 2018. Help organizing your COSMIN risk of bias ratings [Excel form]. <https://www.cosmin.nl/tools/guideline-conducting-systematic-review-outcome-measures/>
- Terwee, C. B., Jansma, E. P., Riphagen, I. I., & de Vet, H. C., 2009. Development of a methodological PubMed search filter for finding studies on measurement properties of measurement instruments. *Qual. Life Res.* 18, 1115-1123. <https://doi.org/10.1007/s11136-009-9528-5>
- Terwee, C. B., Prinsen, C. A., Chiarotto, A., Westerman, M. J., Patrick, D. L., Alonso, J., ... & Mokkink, L. B., 2018. COSMIN methodology for evaluating the content validity of patient-reported outcome measures: a Delphi study. *Qual. Life Res.* 27, 1159-1170. <https://doi.org/10.1007/s11136-018-1829-0>
- Terwee, C. B., Prinsen, C., Chiarotto, A., De Vet, H., Bouter, L. M., Alonso, J., ... & Mokkink, L. B., 2018. COSMIN methodology for assessing the content validity of PROMs—user manual. Amsterdam: VU University Medical Center, 1159-70.

- Weeks, J. W., Spokas, M. E., & Heimberg, R. G., 2007. Psychometric evaluation of the mini-social phobia inventory (Mini-SPIN) in a treatment-seeking sample. *Depress. Anxiety*, 24(6), 382-391. <https://doi.org/10.1002/da.20250>
- Weinberger, A. H., Darkes, J., Del Boca, F. K., Greenbaum, P. E., & Goldman, M. S., 2006. Items as context: Effects of item order and ambiguity on factor structure. *Basic Appl. Soc. Psychol.* 28(1), 17-26. https://doi.org/10.1207/s15324834basp2801_2
- Wiltink, J., Kliem, S., Michal, M., Subic-Wrana, C., Reiner, I., Beutel, M. E., ... & Zwerenz, R., 2017. Mini-social phobia inventory (mini-SPIN): psychometric properties and population based norms of the German version. *BMC psychiatry*, 17(377), 1-10. <https://doi.org/10.1186/s12888-017-1545-2>
- Wright, A., Hannon, J., Hegedus, E. J., & Kavchak, A. E., 2012. Clinimetrics corner: a closer look at the minimal clinically important difference (MCID). *J. Man. Manipul. Ther.* 20(3), 160-166. <https://doi.org/10.1179/2042618612Y.0000000001>
- Wyrwich, K. W., Nienaber, N. A., Tierney, W. M., & Wolinsky, F. D., 1999. Linking clinical relevance and statistical significance in evaluating intra-individual changes in health-related quality of life. *Med. Care.* 37(5), 469-478

Chapter 3: Bridging Chapter

This chapter aims to provide a connection between the systematic review (Chapter 2) and the empirical research project (Chapter 4).

The systematic review synthesised and evaluated the evidence for the psychometric properties of the Mini-Social Phobia Inventory (Mini-SPIN) (Connors et al., 2001), to determine if it is a psychometrically robust measure of social anxiety. Overall, the systematic review found some limitations with the development of the Mini-SPIN, such as a lack of content validity and insufficient evidence to determine the internal structure. Therefore, the structure and concepts of the Mini-SPIN remain unclear. Hence, the findings from the review highlight a possible gap between our conceptual understanding of social anxiety and our measurement tools.

As identified in the introductory chapter, social anxiety cannot be directly observed (El-Den et al., 2020; DeVellis, 2006), meaning that psychometric measures are based on reflective models which assumes that the items of the measure together reflect the latent construct (Coltman et al., 2008). However, as we cannot directly observe anxiety each measure can be developed to assess the construct differently through varied item content and factors (Anunciacao, 2018; El-Den et al., 2020). This can be seen across social anxiety measures which are all assessing the same construct yet ask different questions and are supported by different factorial structures (Oakman et al., 2003; Safren et al., 1998). The heterogeneity of social anxiety measures and the finding from the systematic review that concepts are not always well evidenced, suggests that we may lack agreement on the conceptualisation of social anxiety.

These systematic review findings are particularly theoretically useful, as they highlight the considerable variability in how social anxiety is being measured and defined, thus presenting a possible challenge to the positivist idea that there exists a ‘real’ anxiety that

can be easily measured (Park et al., 2020). As such, some have argued that definitions and conceptualisations of latent constructs such as anxiety are socially moulded through discourse (Burr & Dick, 2017). According to this view, language plays a crucial role in how we come to socially understand latent constructs such as anxiety (Burr, 2015). Today, apps such as TikTok offer accessible digital spaces for users to discuss their experiences and share personal narratives (Mordecai, 2023), which may then inform wider conceptualisations. The empirical research project therefore aims to explore the digital discourse around anxiety disorders on TikTok, in order to understand the impact of visual digital media in the construction of the latent constructs of anxiety.

As anxiety is not a construct that can be easily measured and observed, it could be argued that we cannot truly understand the construct of social anxiety without considering the social, cultural and political context in which it exists. The empirical project therefore endeavours to explore the conceptualisation of anxiety through a social constructionist and critical epistemological position.

Chapter 4: Empirical Paper

A Multimodal Critical Discourse Analysis of #anxiety and #socialanxiety on TikTok: Exploring the Digital Construction of Anxiety

Amber Ovens^{a*}, Fergus Gracey^a, Eleanor Chatburn^a

^a Department of Clinical Psychology, University of East Anglia, Norwich Research Park,
Norwich, Norfolk, NR4 7TJ, United Kingdom.

*Corresponding author: Amber Ovens, University of East Anglia. Email: a.ovens@uea.ac.uk

Word count: 7995 (excluding title page, references and appendices)

This study has been reported in accordance with Qualitative Research in Psychology Journal,
please see Appendix M for Journal requirements

Abstract

Online mental health discourses, particularly on TikTok, have grown in recent years and may have implications on wider societal conceptualisations and practices. This study is based within a social constructionist framework and uses a Multimodal Critical Discourse Analysis to explore anxiety discourses under #anxiety and #socialanxiety on TikTok. Ten videos per hashtag and ten comments per video were selected. Themes derived from anxiety videos included: Medicalised, self-promotion/self-help, emotional turmoil, empowerment and responsibility. Comments under #anxiety videos clustered into six themes. Themes derived from social anxiety videos included: trivialising, define and conquer, and power and control. Comments under #socialanxiety were grouped into five separate themes. A critical Marxist perspective was also applied to the analysis to provide a summary of how themes related to power. Findings revealed that TikTok prioritises certain discourses which often result in the commodification of anxiety and trending discourse, which contain emotional personal narratives, medicalised representations and an emphasis of individual responsibility. Overall, TikTok discourses continue to disseminate dominant ideologies and support current power structures. Findings should be considered within the context of the study's strengths and limitations, along with clinical implications and future research.

Introduction

Anxiety disorders are some of the most common mental health difficulties experienced globally (Javaid et al., 2023; Stein & Stein, 2008). Since the expansion of social media, many people across the world are now confiding in online spaces about their mental health (Basch et al., 2022; Pavlova, & Berkers, 2020; Drioli-Phillips et al., 2020, 2021; Pretorius et al., 2019). Subsequently contributing to a rise in online mental health discourse (Blair & Abdullah, 2018; Stupinski et al., 2022). Discourse refers to “socially constructed knowledge(s) of (some aspects of) reality” (Zhao et al., 2017, p.5). Discourse is created using language, ways of presenting (videos and images) and social interactions that function to construct our understanding of reality based on our social and historical contexts (Burr, 2015).

There is potential for this increase in public discourse about anxiety to have both positive and negative effects. Ziebland and Wyke (2012) found that individuals find benefit from online health content as they feel supported, can develop relationships and exchange information. Additionally, social media can be a constructive space by facilitating discussions (Rathy, 2023) and raising awareness (Berry et al., 2017), which can help reduce stigma and increased mental health literacy (Foulkes & Andrews, 2023). However, there is limited regulation when it comes to sharing information on social media, which increases the risk of inaccurate information, unhelpful narratives and misunderstanding (Suarez- Lledo & Alvarez-Galvez, 2021; Sadagheyani & Tatari, 2021).

Additionally, certain discourses that construct knowledge about anxiety may reinforce certain groups and marginalise others (Wandel, 2001). Discourses are often influenced by various power relations, social norms and wider structures, as it is those with power who have more opportunities to disseminate and legitimise discourse (Burr, 2015). Importantly, online discourses are heavily influential as they can reach billions of people (Basch et al.,

2022). Therefore, it is important to develop an understanding of the language and visual depictions used to represent anxiety online.

TikTok is a social media platform that enables users to create and consume short videos (Li et al., 2021), which can be disseminated either through the app's "For You Page" or using hashtags, which organise videos based upon topics (Laucuka, 2018). TikTok plays a vital role in sharing digital information, as it doesn't just rely on words but instead uses a multimodal production of videos, music and sounds. The technological design of TikTok means that it has some control over how creators use multimodality, for example TikTok will recommend music and trending filters. Hence, TikTok will "privilege certain recourses by making them more accessible" (Kress & van Leeuwen 2021, p.3). Additionally, some have suggested that the algorithmic nature of TikTok means it is programmed to present users with the most popular and engaging content (Klug et al., 2021).

TikTok features along with the ability to comment, like and share allows users to interact with the content and contribute to discourses in less explicit ways (Albert & Salam, 2013). TikTok also grants all users permission to contribute, create and share discourse with minimal checks, whether you are an expert or a lay person (Pavlov & Berkers, 2022; Lyons, 2000). Therefore, with that freedom comes the possibility to challenge dominant discourses as it provides opportunity for all users not just those in power to contribute, legitimise and disseminate discourses (Bouvier, 2022).

Postmodernist theories such as the Foucauldian theory suggests that mental illness has become a vehicle for social control, labelling deviant behaviours as disordered (Foucault, 1980; Cohen, 2017). According to Foucault the labelling and categorisation of mental health has been shaped by medical discourse due to power- knowledge relations (Foucault, 1980; Cohen, 2017; Cisney & Morar, 2020). Subsequently, some have argued that the belief that

mental health can be understood within a medicalised framework has then become normalised (Cohen, 2017).

Expanding on this, other theories such as Cohen's (2017) Marxist critique when applied to online spaces, may suggest that mental health discourse has become popularised through the process of normalising language found within the Diagnostic and Statistical Manual (DSM) (American Psychiatric Association, 2022). Hence, causing users to buy into the diagnostic categories which may then further encourage individuals to pursue individualistic interventions which bring economic benefit (Cohen, 2017), continuing to embed an individualistic account of mental health by ignoring social determinants (Esposito, & Perez, 2014). Moreover, the Marxist critique argues that the psychiatric discourse has led to an increased credibility of professionals, who can then sell services and treatments (Cohen, 2016). Overall, highlighting how we have now come to understand our experiences of mental health within a psychiatric discourse.

As outlined in Cohen (2017) people with mental illnesses are not "passive recipients of expertise; they are urged to become active, responsible consumers of medical services and expertise" (Rose & Abi-Rached, 2013 as quoted in Cohen, 2017, p.42). This may offer some explanation as to why people who are suffering from anxiety will actively seek out mental health information online (McMullan et al., 2019). These theories pose an argument for the political role of mental health discourse in the construction of anxiety; however, to our knowledge these critical perspectives have not yet been applied to online anxiety discourses.

Previous research investigating mental health discourse on social media has found mental illness to be portrayed as aesthetic (Vidamaly & Lee, 2021), leading to a romanticisation and glamorisation (Jadayel et al., 2017). Research by Issaka et al (2024) found that social media users highlighted how the romanticisation of mental health could lead to misidentification of symptoms. They also noted that romanticisation is often used by

businesses, suggesting that the glamorisation of mental health may be a capitalist ploy. Additionally, research has also posed issues around the trivialising of mental health (Robinson et al., 2019), the use of humour (Schaadhardt et al., 2023) and oversimplification (Pavelko & Myrick, 2015). Moreover, Engel et al (2024) highlighted the role of social media influencers in the dissemination of unhelpful mental health discourses through the over generalisation of their lived experiences, which may subsequently cause people to generalise these experiences to their own lives.

Despite the growing mental health content online, there is still limited research investigating visual based platforms like TikTok. Zheluk et al (2022) found that TikTok videos produced by the lay person were mostly related to symptomatic relief and videos by professionals tended to focus more on coping strategies and education. Additionally, they also found anxiety content in which users were self-disclosing and sharing personal narratives. Additionally, research by Gallagher (2021) found that TikTok comments consisted of users sharing personal experiences and that videos were mostly informational, anecdotal, and were humorous. However, both studies lacked an in-depth account of the content focusing mostly on surface level descriptions.

Balcıoğlu (2024) conducted a discourse analysis of anxiety management strategies within 45,639 TikTok comments. The study found themes of empowerment and individual coping strategies, which highlighted personal agency and responsibility to manage anxiety “as part of everyday self-care”. They also found a theme of community support and recognising and navigating triggers, which included mentions of medical interventions. However, the authors acknowledged that the study was limited due to not fully capturing all multimodal components that contribute to discourse on the app.

Finally, previous research by Mordecai (2023) used a multimodal discourse analysis of #anxiety. They found videos promoting calming practices, videos with personal testimony,

practice sharing, and communal support as seen through comments under videos. However, the study lacked a critical insight into analysis and only focused on one hashtag.

Building on previous literature, this current study aims to explore discourses under two anxiety hashtags on TikTok. This research is important as large amounts of online anxiety-related discourse can distort the concept of anxiety, potentially altering how we understand it and the social practices related to it (Lyons, 2000). This research aims to expand and update our current understanding of the online portrayal of anxiety and explore the role of power within these discourses.

Research questions:

Q1. What narratives and themes are being perpetuated through discourse under #anxiety on TikTok?

Q2. What narratives and themes are being perpetuated through discourse under #socialanxiety on TikTok?

Q3. How is the multimodality of TikTok shaping anxiety discourses?

Q4. What are the dominant anxiety discourses?

Q5. How is power being used and could this be oppressive?

Methods

Design

This study uses a Multimodal Critical Discourse Analysis (MMCDA), drawing upon methods and analytical tools proposed by Kress and Van Leeuwen (2001), Ledin and Machin (2018, 2020) and Machin and Mayr (2023), to critically evaluate anxiety discourses on TikTok. This methodology assumes meaning is created through multimodality, which is “the use of several semiotic modes” (Kress & Van Leeuwen 2001, p.20), such as language, images

and sounds (Danielsson & Selander, 2021; Machin & Mayr, 2023). Semiotic modes are assumed to hold purpose, therefore, how we choose to use them informs our meaning making (Harper, 1995; Machin & Mayr, 2023). This method also considers power relations, wider ideologies, and political underpinnings in the construction of meaning (Machin & Mayr, 2023).

A MMCDAs was selected as it provides analytical scope to explore the various modal complexities afforded to users on the app, as well as alignment with the author's epistemological stance. This study is situated within a social constructionist framework, which understands anxiety as something that has been socially evolved through shared language and discourse (Lyons, 2000; Burr, 2015). Moreover, within qualitative research the researcher is often regarded as the 'instrument for interpretation' (Dodgson, 2019). As such, consideration was given to the researcher's role in the construction of meaning; tools such as a reflexive diary and supervision were used to promote reflexivity (Ben-Ari & Enosh, 2011). The main author was a twenty-seven-year-old, white, British, female Clinical Psychology Doctoral student, who had witnessed through clinical work the profound impact social media has on young people's perception of their mental health, a driving motivator to this research. This along with other experiences were considered in the co-construction of meaning between researcher and data (Ben-Ari & Enosh, 2011). The main author had five years of experience working clinically, including experience prior to doctoral training. The research team also consisted of two qualified Clinical Psychologists, who able to provide expertise in qualitative research.

Additionally, this study is reported where applicable in accordance with Consolidated Criteria for Reporting Qualitative Research (COREQ), see Appendix N for checklist. Moreover, quality of this study was managed using principles set out by Lincoln and Guba (1985) and Yardley (2000) and will be discussed throughout where appropriate, however, full

consideration for ensuring trustworthiness and credibility of the results will be outlined in the strengths and limitations.

Ethical considerations

Ethical approval was granted by the University of East Anglia Faculty of Medicine and Health Sciences Research Ethics (see Appendix O). For ethical reasons only publicly posted content was included and all data was anonymised. The data was stored, managed and analysed on Excel and NVivo 14. This study follows similar principles to previous research by removing usernames (Mordecai, 2023) and does not include images from videos. Additionally, this study shares minimal information and does not include direct quotations, but instead paraphrases and describes content, as sharing original quotes and detailed information could lead to re-identification of the user, therefore posing a risk to privacy. This was important given that this study had no direct contact with users and was researching mental health (Zhang et al., 2024).

This study paraphrased quotes based on the following definition “A rewording of something written or spoken by someone else” (Oxford University Press, n.d) and drew on techniques such as the use of synonyms and lexical substitution, changing sentence structure, word order, word form, condensing, generalising and removing identifiable terms. Importantly, quotes were only paraphrased when the meaning could be retained whilst minimising traceability. In this study, the original quotes often contained specific rhetorical devices such as metaphors, trending voice-overs or were short, which all posed a challenge for paraphrasing. Therefore, in some circumstances, the content was described rather than paraphrased to maintain meaning and minimise traceability. Additionally, quotes were also described when paraphrasing did not offer enough protection.

The decision to share minimal data, paraphrase and describe content was made in accordance with the British Psychological Society (BPS) Code of Human Research Ethics

(2021a) and the BPS Ethics Guidelines for Internet-mediated Research (2021b), which highlight the possible risk of re-identification and the complexities of online spaces, including the blurred boundary between public and private. Although some have argued for the inclusion of quotes to aid trustworthiness, such quotes must also be ethically sound (Eldh et al., 2020). Therefore, we have decided to place ethics at the forefront of this study, adhering to the BPS guidelines (2021a, 2021b).

Data collection

A purposive sampling technique was employed to collect data, in which the researcher along with use of Patient and Public Involvement (PPI) judged the following two hashtags to be the best way of obtaining representative data. Two new TikTok accounts were created for the purpose of this study (one per hashtag) to avoid previous searches impacting the results. Videos were collected in April 2024 through #anxiety and #socialanxiety. The units of analysis included language, visual and auditory data from videos and comment sections.

Video selection

The method for video selection was inspired by previous research (Mordecai, 2023) plus the following criteria: Videos had to be publicly posted, related to either anxiety or social anxiety and the videos had to be in English. Duplicate videos were excluded. The sample for this study was made up of the top 10 videos under each hashtag, which are ranked by TikTok's algorithm.

TikTok is constantly updating, therefore, this study only captured a snapshot of trending discourse. At the time of writing #anxiety has roughly 39 billion views and 5.2 million posts, additionally, #socialanxiety has roughly 3.2 billion views and 265.2 thousand posts. These hashtags were selected due to their popularity and use within both medical and lay populations.

Comment selection

Data was collected for the top 10 comments under each video, comments are ranked by TikTok's algorithm. Metadata including number of likes and shares were extracted from the sample (see Table 1 and 2).

Table 1.

Metadata of videos under #anxiety

Video	Date published	Likes	Comments	Shares	Favourited
1	03-11-2023	1.2M	6431	15.4K	158.6K
2	21-03-2023	199.3K	1845	5929	33K
3	12-05-2023	31.3K	222	4178	7376
4	05-06-2022	2.6M	29.5K	37.2K	367.1K
5	24-10-2023	16.4K	179	514	3368
6	18-11-2023	1.2M	6686	14K	196.3K
7	06-12-2023	539.5K	2,011	7395	89.6K
8	15-04-2023	375K	3409	10.4K	56K
9	12-08-2022	768K	5907	106.9K	170.3K
10	05-04-2024	386K	2282	7951	24.3K

Note. Table shows number of times each video was liked, commented on, shared and favourited. M= million and K= thousand

Table 2.

Metadata of videos under #socialanxiety

Video	Date published	Likes	Comments	Shares	Favourited
1	25-03-2024	177	3	1	29
2	23-04-2024	25.2K	161	381	2845

3	10-05-2023	24K	267	490	8218
4	11-03-2023	35K	521	1160	8497
5	25-08-2023	1.4M	9966	60.5K	90.2K
6	15-09-2022	867.7K	4012	15.1K	110.7K
7	22-08-2021	43.8K	1162	821	2513
8	20-03-2024	80.6K	712	1769	12.1K
9	30-10-2023	4570	29	153	1192
10	30-03-2023	268K	1381	10.1K	18.1K

Note. Table shows number of times each video was liked, commented on, shared and favoured M= million and K= thousand

Analysis

Analysis was in keeping with a social constructionist approach and a MMCDAs was applied, guided by Machin and Mayr (2023) allowing for a systematic analysis of the data. A reflexive diary was also used throughout to consider researchers pulls and bias and how this contributed to the construction of meaning (Yardley, 2000).

The analysis consisted of the following phases: (1) familiarisation and transcription (2) separation of visual data, lexical data and comments from the videos, (3) development of separate codes for visual data, lexical data and comments, (4) construction of initial themes from combined visual and lexical codes for videos, (5) continued theme development for videos, (6) development of separate themes for comments, (7) presentation of final themes for videos derived from inductive analysis of both visual and lexical data, and (8) presentation of final themes from comment sections. For a visual representation of analytical process, see Appendix P.

An additional qualitatively distinct phase was also taken, in which we applied a more deductive approach to the data to help answer the pre-defined research questions. In doing so

we applied a critical lens to the analysis, in keeping with a Marxist theory (Cohen, 2017), to draw out possible power relations across the themes. This final step provided a synthesis presented through a critical analytic map, which allowed us to further unpick and reflect on the ways in which representations of anxiety on TikTok may empower or disempower.

Coding and verbatim video transcription was conducted by first author (AO), allowing for further familiarisation and consideration of the wider sociocultural context, salient themes and intended purpose/audience (Kress & Van Leeuwen, 2021; Machin & Mayr, 2023). The data was then separated to allow for appropriate analysis of each unit accordingly.

Coding was informed by Machin and Mayr (2023) and was conducted manually on Microsoft Excel and NVivo 14. An inductive coding approach was adopted so the analysis could be tailored (Tudehope et al., 2024), as the data was largely heterogenic and nonlinear (Bouvier & Machin, 2020) (i.e., visual, auditory and text). Following coding, themes were constructed separately for videos and comment sections. Themes for videos considered the relationship between visual and lexical data, as well as wider context, power, social relations, ideologies, and identities (Baldry & Thibault, 2006). Following each phase, supervisory discussions occurred in which alternate interpretations and reflection took place. Analysis concluded when the research team felt saturation had been met (Fusch et al., 2018; Saunders et al., 2018).

Results

#anxiety

Videos under #anxiety were found to depict the construct in two ways: videos providing psychoeducation and videos showing lived experiences, see table 3.

Table 3.

Table showing video characteristics for #anxiety

Video	Category	Content	Gender*	Person
1	Lived experience	Sharing personal experience of emotional impact of anxiety	Female	Lay
2	Psychoeducation	5 signs anxiety is getting worse	Female	Expert
3	Psychoeducation	Podcast section on what anxiety is and how to manage	Female	Expert
4	Psychoeducation	What anxiety can look like	Female	Lay
5	Psychoeducation	What silent anxiety looks like	Female	Lay
6	Lived experience	Sharing of emotional distress from anxiety	Female	Lay
7	Lived experience	Sharing of personal experience of anxiety	Female	Lay
8	Psychoeducation	What anxiety looks like	unknown	Lay

9	Psychoeducation	Informative talk about what anxiety is and how it is managed	Female	Expert
10	Lived experience	Sharing of personal experience of sharing worries	Female	Lay

**Note.* These are the researchers' assumptions on gender as the researcher as not able to consult creators, therefore, this should be interpreted with caution.

Psychoeducation videos

Overall, six videos provided psychoeducation and discussed anxiety as a pragmatic phenomenon. Analysis led to the construction of the following discursive themes:

Medicalisation

Within the medicalisation discursive theme, we see anxiety presented as a visible phenomenon through physical “signs” and symptoms. Lexical structures such as listing were employed by three of the videos (video 2, 4 and 5) to present “signs of anxiety” and included examples such as “nail biting, appetite changes, feeling hot and dissociation” (video 4). Lists are used as a strategy to help reflect the creator’s perception of anxiety; by prioritising the physical symptoms the creator portrays anxiety as a physical disorder. Additionally, jargon such as “dissociation” helps present anxiety as a serious condition, but by embedding it within everyday normal behaviours the listing works to simplify, generalise, and reduce anxiety down to a few physical signs connotated with something more serious.

The portrayal of anxiety as a physical disorder continues in video 3, through strategies such as overlexicalisation, in this case repetition of words connoting something related to the body. In video 3 the creator is presented to viewers as an “expert” who describes and simplifies anxiety down to a process within the body. In the description, the creator explains how anxiety gets trapped in the body, causing the body to feel restless, which only exacerbates the anxiety further. The creator’s representation further obscures anxiety as a physical illness using rhetorical devices such the personification of the body. In addition, the creator uses metaphors relating to anxiety and the body, which work in tandem with personification to replace real processes with abstractions. The use of abstractions helps to legitimise the creator’s narrative and maintain beliefs that experts hold power over mental health through knowledge.

The medicalised discourse is reinforced further through honorifics which are titles or words often reflecting social status, “I’m Dr [name]” (video 2). The title of Dr works to align with the idea of expertise and hence achieves a sense of credibility. The background of video 2 also shows a clinic room, which connotes ideas around medical intervention. This discursive theme reveals ideological framing around anxiety being a medical disorder, as it highlights physical manifestations, medical connotations and omits systemic or subjective aspects.

Self -promotion/ self help

In this discourse creators are seen to encourage viewers to self-identify with the listed signs of anxiety through asking if it relates to them (video 2). After this we see many creators then promoting themselves as offering solutions “view my profile for more advice” (video 2) or even visually by wearing clothing with their branding on (video 5).

Self-promotive discourses are seen by both the lay and expert creators, “To prevent worrying, try my powerful technique and put an end to your anxiety” #nameofthetechnique

#nameofcreator (video 9). The use of hashtags and various lexical strategies, work here as marketing tools to sell the creators ideas whilst also promoting aspects of self-help. The choice of words helps to convey a sense of strength and mystery to her strategy, which works to “sell” her idea, aligning with a capitalistic and societal need for a quick fix. This subtle self-promotion entices viewers to buy into their ideas. It also creates an availability heuristic, simplifying and promoting a quick solution to anxiety may influence how users of the app perceive anxiety and may possibly further emphasise self-help.

Lived experience videos

Two discursive themes were found under lived experience videos: Hidden emotional suffering and an empowerment discourse.

Hidden emotional suffering

Within this discourse we see anxiety as an invisible phenomenon, juxtaposing the medicalised discourse identified earlier. Videos 1 and 7 feature a voice-over about the loneliness and isolation caused by anxiety, particularly due to anxious thoughts. The voice-over also emphasises the need for coming together and having open conversations about anxiety. The depiction of anxiety as a hidden phenomenon is partially achieved through metaphors which focus on anxiety being something within your mind (video 7), but also through multimodal strategies, such as the creator’s lack of gaze in times of emotional distress and the backgrounds being private personal spaces. Both strategies suggest that anxiety is something hidden from the outside world. Additionally, we see lay creators trying to hide their emotional suffering by repeating “I’m okay” (video 6), the repetition further emphasises that she is in fact not okay and further attempts to portray anxiety as hidden emotional suffering.

Additionally, throughout all four videos we do not see the creators speak but instead they choose voice overs or emotive music. This helps to dramatise the video but is also

suggestive of wider ideologies of not talking about mental health and needing to hide it. Auditory elements, particularly legato music and incorporated pop culture references enhanced the emotional appearance and work to romanticise anxiety. Additionally, low lighting and visually seeing creators' emotions are used to highlight depth of suffering, helping viewers to connect empathetically.

Additionally, creators under this depiction often drew upon visual strategies to enhance the aesthetics of their videos, so despite sharing raw emotional experiences they often used filters and wear makeup (video 6), portraying a 'beautiful suffering'.

Empowerment

Throughout the lived experience videos, the use of personal pronouns "me" (video 7) and possessive adjectives such as "your" (video 1) generates a personal and introspective stance. It also helps to position the individual as the agent responsible for their own problems, alluding to wider ideologies of anxiety being something within the individual. The use of possessive adjectives such as "your" (video 1) work to position the individual with anxiety as both suffering and responsible, suggesting that they are both the oppressed and oppressor.

However, through an empowerment discourse, we see the creators with lived experience challenge this idea and want to break free from the hidden silenced suffering. This is powerfully illustrated with a visual metaphor of the creator lighting a match combined with language suggesting a need to unite to overcome anxiety, otherwise lots more people will continue to struggle (video 1). The metaphor helps to symbolise an uprising. However, this message is also underpinned by a moral panic as it implies that without immediate action suffering will continue. The empowerment discourse also changes pronouns from "you" to "we" generating a sense of collectivism, which when combined with aggregation "many others exist who are struggling" (video 7) gives the impression of a big group, almost like an army of people going to war to break free from the powerful force of anxiety. There is some

thematic tension between the creator's voice-overs explaining the need to come together and talk and the visual modes where the creators are seen to be alone and silent. Despite the desire for emancipation from suffering, this theme still places responsibility of change on to the individual and neglects wider social determinants.

Dominant anxiety discourse

Responsibility

Despite the wide variety of options and semiotic choices that can be made by TikTok users, there is one dominant anxiety discourse, responsibility. Neoliberal ideas of anxiety being the individual's responsibility are dispersed across all discourses, mainly through the rhetorical device of pronouns. The over personalisation through statements and metaphorical tropes that include "your" (video 2) exaggerate personal responsibility. We also see the emphasis of personal responsibility through the complete absence of wider systemic/ social determinants in any of the discourses. Furthermore, the abstraction and personalisation of the body and overemphasis of physical characteristics also obscures the responsibility and makes anxiety seem like an inherent personal quality. This individual responsibility is also motivated through moral panic as videos suggest that anxiety may be "deteriorating further" (video 2) and that our body is telling us "something must be wrong" (video 3), which creates a sense of urgency and further reinforces individual responsibility.

Comments

Comments under #anxiety were found to cluster into six overall themes, see table 4. Comments under psycho-education videos contained the most amount of tagging of other users and videos from experts received the greatest number of comments challenging the video content. Additionally, comments under lived experience videos found that users typically copied the creator's self-disclosure by sharing their own personal experiences.

Comments also reflected anxiety as a medical disorder, users relating to the content and the lifelong impact and misunderstanding.

Table 4.

Themes from #anxiety comments

Themes	Description
Anxiety as a medical disease	This theme captures comments in which users describe anxiety like a disease, they discuss diagnosis, symptoms and treatments
Anxiety as a normal emotion	This theme captures comments that reflect ideas around anxiety being a normal human emotion
Community support and help	This theme captures comments that create a sense of community, with users sharing experiences, asking for help, supporting each other and sharing with friends.
Disagreeing with video content	This theme captures comments where users are disagreeing or challenging the content in the video
Lifelong impact and misunderstanding	This theme captures any comments where users discuss the negative impact of anxiety and times where they have been misunderstood by others
Relating and self-identification	This theme captures comments where the users begin to self-identify after watching the

video or comments that express self-diagnosis.

#socialanxiety

Videos under #socialanxiety were found to depict the construct in three ways: light-hearted videos, psychoeducation and lived experience. Video characteristics and demographics can be seen in Table 5.

Table 5.

Table showing video characteristics for #anxiety

Video	Category	Content	Gender*	Person
1	Lived experience	Experience of overcoming SA	Female	Lay
2	Light-hearted	Demonstrating SA in classroom setting	Female	Lay
3	Psychoeducation	Offering advice	Female	Lay
4	Psychoeducation	Explaining SA on podcast	Male	Expert
5	Light-hearted	Meme	Female	Lay
6	Psychoeducation	5 things about social anxiety	Female	Expert
7	Lived experience	Personal narrative	Female	Lay

8	Psychoeducation	Educating someone how to speak publicly	Male	Expert and Lay
9	Psychoeducation	Podcast between therapist and celebrity	Female	Expert and celebrity
10	Light-hearted	Demonstration of experiencing SA	Female	Lay

Note. SA= Social anxiety *important to note that these are the researchers' assumptions on gender as the researcher as not able to consult creators, therefore, this should be interpreted with caution.

Light-hearted videos

Overall, three videos fell into this category, and the following discursive theme was found:

Trivialising discourse

The trivialising of social anxiety was achieved through lexical and visual strategies that generated a humorous narrative, such as overly exaggerated facial expressions, gaze and zoomed in angles. Additionally, overly simple informal language “man i can’t be bothered to chat atm” (video 5), exaggeration “I will remember that unimportant event for years to come” (video 10) and the use of everyday normal experiences, such as small talk re-enacted and recontextualised, work to trivialise the experience of social anxiety. The overly simplified and informal stance is then combined with more serious issues such as suicide “deliberating existence” (video 2), which works to reinforce stereotypes, generalise social anxiety and minimises more complex issues, implying that it is just an everyday experience. Minimising

and normalising social anxiety in this way could work to oppress the pain suffered by those who are struggling in the lived experience videos.

Psychoeducation

Overall, five videos fell into this category, and the following discursive theme was found:

Define and conquer

Social anxiety is defined in this discourse mostly as a mental process, achieved by using quotation marks around anxious statements to represent internalised thinking:

“Individuals with social anxiety tend to focus their mind inward. “What do I look like?”

“Hopefully, I haven’t gone red” (video 9). In this theme social anxiety is presented as a cognitive process mostly related to fear of social judgment, although there is some thematic tension through mentions of behavioural aspects “Inevitably you withdraw yourself and avoid others” (video 4).

Following this, videos display management strategies “What are the ways to defeat social anxiety” (video 9). The lexical choices made in video 9 connote ideas around regaining power. Additionally, from within this discourse we can understand that those with social anxiety are often in conflict and may feel powerless as they are “fighting with their own anxieties” (video 6). Hence the management strategies within this discourse align with this, presenting pragmatic solutions targeted at things the individual can control (video 9).

However, some of the strategies work to oversimplify anxiety, such as suggesting “try not to think about it” (video 3) which only works to reinforce that it is an individual’s responsibility.

Additionally, the pragmatic solutions are also framed through a dismissive tone in which creators minimise anxiety through stating “don’t stress, you will be okay” (video 3) and that “rationally nothing is going to occur” (video 8). These more pragmatic solutions to conquering social anxiety are possibly dismissing of people’s very real experiences but align

with wider societal ideas around self-help and neoliberal view of it being an individual responsibility.

There is some thematic tension as there is also an underlying therapeutic narrative, seen visually through modelling of therapist talking about social anxiety. This therapeutic narrative slightly challenges the more pragmatic solutions but is not sufficient to challenge dominant themes of self-help and individual responsibility.

Lived experience videos

Two videos fell into the lived experience depiction and the following discursive theme was found:

Power and control

This theme works to present a spectrum of power, from liberation to powerlessness. The videos construct social anxiety as something powerful “I had to leave even though I was having fun with friends as anxiety took over and didn’t allow me to stay” (video 7), possibly leaving those experiencing social anxiety feeling powerless. We see this also reflected through visual resources of poor lighting which portray a darkness and heaviness to the video, combined with slow piano music which adds to the emotive feeling.

At the other end of the spectrum, an emancipatory video works to redistribute power “you don’t have to let social anxiety dictate your life or control your actions” (video 1), this is also supported by visual strategies of bright natural light and the creator looking off into the distance, which helps to portray a sense of optimism and hope. However, this discursive theme is not free of oppressive means as the creator then goes on to promote her own resources “my free guide to overcoming social anxiety, which contains activities to support your recovery. Give it a go and start feeling like a better you!” (video 1). Although the promotion of her work is framed as empowering and liberating it may also reinforce ideas

that it is the individual's responsibility to help themselves and that purchasing self-help products is the way to do this.

Comments

Comments under #socialanxiety were found to cluster into five overall themes, see Table 6. Comments under lived experience videos tended to fall mostly into themes of sharing, support and solidarity and relating to video content. Comments under light-hearted videos also tended to fall mostly into sharing support and solidarity, with some comments also trying to make sense of what is social anxiety and comments reflecting theme of relating to video content. Comments under psychoeducation tended to fall into themes of challenging video content and there was a greater amount of tagging other users.

Table 6.

Themes from comments under #socialanxiety

Themes	Description
Sharing, support and solidarity	This theme captures comments which helps build a community. We see this through users sharing their own experiences, seeking and sharing advice and knowledge as well as offering support to others.
Relating to video content	This theme captures comments where users relate to the content, often through shared experiences but also includes comments where users are self-identifying and self-diagnosing
Comical and engagement with content	This theme captures comments where the users are interacting with the content of the video,

	finding the video funny but also commenting unrelated things.
Making sense of what is social anxiety	This theme captures comments in which users are trying to decipher what is and what isn't social anxiety
Challenging video content	This theme captures comments where the users report finding the video unhelpful, where they disagree with content or are making fun of the creator

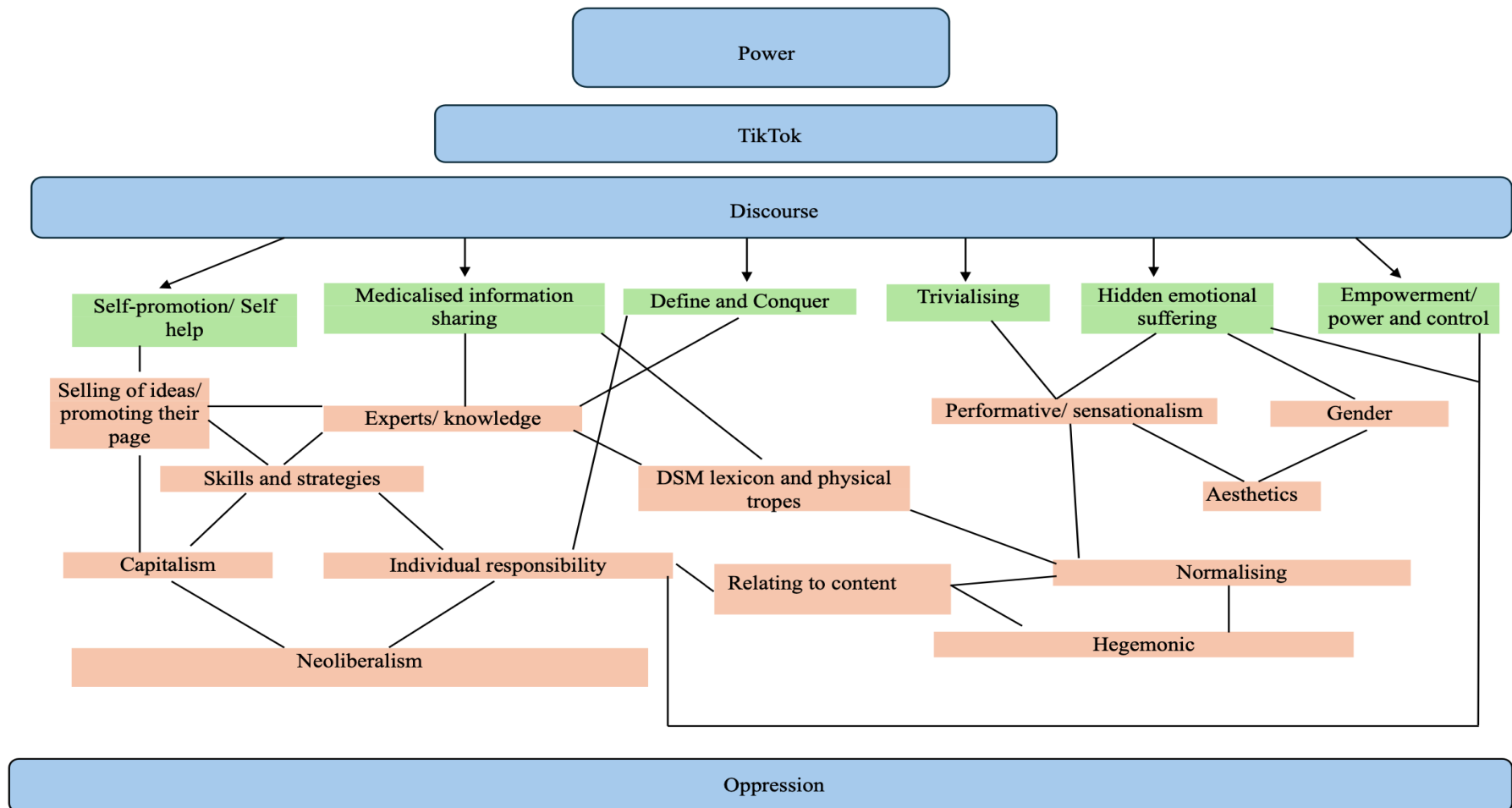
Power

This section presents an overarching summary of how power may operate across both hashtags in line with a critical Marxist theory, see Figure 1. The medicalised discourse identified under #anxiety was likely reinforced through the credibility of experts, which worked to further perpetuate and legitimise western medicalised ideologies using DSM lexicon and physical tropes. Additionally, the self-promotive/ self-help discourses provide ideas which may further encourage users to feel responsible for their difficulties by ignoring social determinants, hence causing a downward delegation of responsibility aligning with neoliberal ideologies. This increased sense of personal responsibility may drive users to then further seek out individualistic interventions and engage in self-help strategies sold by creators online. The discourses found under #socialanxiety further illustrated a performative and sensationalised view of social anxiety through humour. Moreover, all the hidden emotional suffering videos were presented by women, who often presented with make-up and filters, possibly further presenting an aesthetic version of anxiety. Presenting anxiety through aesthetic means may then aid in users wanting to relate as it could be seen as desirable.

Finally, through this lens discourses could be seen as working to commodify anxiety through the combination of medicalised information sharing, content promoting self-help, as well as an aesthetic and performative nature of many of the videos which helped to provide entertainment and relatability.

Figure 1.

Concept map of how power operates across hashtags



Discussion

In answer to our first research question, the findings from the analysis revealed that the narratives and themes being perpetuated through discourse under #anxiety were informative and educational, but often contained medicalised understandings, reducing anxiety down to a few physical signs and symptoms. Additionally, videos were also found to share tips on how to manage anxiety, in which self-promotive and self-help themes were commonly perpetuated through discourse. Finally, some anxiety videos reflected creators lived experiences, containing discursive themes and narratives around emotional turmoil and a desire for empowerment.

In answer to our second research question, ‘What narratives and themes are being perpetuated through discourse under #socialanxiety?’, we found that videos featured narratives that were educational, based on personal lived experiences or were underpinned by trivialised light-hearted depictions. In contrast to #anxiety, #socialanxiety was portrayed through discourse as a mental phenomenon rather than a physical one, supporting dominant cognitive theories of social anxiety (Clark & Wells 1995). Moreover, the lived experience videos still contained emotive content but illustrated a paradox between entrapment and emancipation from social anxiety, seen within the discursive theme of power and control. Finally, videos of a light-hearted nature presented social anxiety through a trivialised discursive theme, framing it as a condition that does not need to be taken seriously.

Comments across both hashtags reflected themes of solidarity and sharing of experiences, which supports conclusions of previous research showing the positive impact of online discourses and communication (Ziebland & Wyke, 2012; Rathy, 2023; Berry et al., 2017). Moreover, the findings of this study are consistent with previous research by Zheluk et al (2022) who found that anxiety videos on TikTok shared educational information, coping techniques and personal experiences (Zheluk et al., 2022; Gallagher., 2021). Furthermore,

like Balcıoğlu (2024), this study also found discursive themes underpinned by personal responsibility for anxiety management.

In answer to our third research question, ‘How is the multimodality of TikTok shaping anxiety discourses?’, we found that across all videos, multimodal techniques were used to create an enhanced, cinematic, and performative nature to anxiety discourses. Applying a Marxist lens helped draw out examples of disempowerment, such as where individuals may have felt the need to “curate themselves for public consumption” (Cohen, 2017). The multimodality and aesthetics seen across videos in this study are consistent with previous research showing that mental illness is often portrayed as aesthetic and desirable (Vidamaly & Lee, 2021; Jadayel et al., 2017). The added dimension of multimodality affords the app and users of TikTok greater power to sensationalise anxiety, which could work to ideologically frame anxiety and social anxiety in misleading ways.

In answer to our fourth research question, ‘What are the dominant anxiety discourses?’, findings demonstrated that despite some push back from those with lived experience trying to regain control of the narrative, the dominant anxiety discourse was responsibility, in which medicalised understandings and neoliberal ideas that mental health is an individual’s responsibility were reinforced (Cohen, 2017). However, within comments we did find some users challenging the dominant ideologies and ‘experts’ that present them. The comments also presented a theme of “anxiety as a normal emotion”. Together these findings offer some support to the idea that online spaces provide opportunity for all users not just those in power to contribute, legitimise and challenge discourses (Bouvier, 2022).

To answer our fifth research question, ‘How is power being used and is it oppressive?’, we applied a Marxist theory (Cohen, 2017) and found that representations of anxiety often work to portray anxiety as a product, encouraging users to buy into anxiety through self-identification, seen in comments under the theme of “relating”. Additionally,

users are encouraged to buy into self- help strategies, seen in videos through the discursive theme of “self-help/self-promotion”. Therefore, we argue that by using TikTok it is hard to avoid the commodifying of distress, meaning users have power over how anxiety is portrayed, which could be oppressive as it may further pathologize and distil ideologies that users should be responsible for their anxiety.

Finally, this study found a favouring of, white female speakers and those with expertise. Absent from these discourses were speakers from diverse backgrounds and genders. Female creators made up 100% of lived experience videos which tended to show more emotions but filtered through an aesthetic lens, social constructionist may argue that due to the social construction of gender and gender roles that women are more likely to be medicalised and presented as overly emotional (Cohen, 2017). However, it could also be that women tend to experience more anxiety and fear in society, possibly intertextual links to women’s safety (Davidson et al., 2016) which at the time of data collection was topical on TikTok (Murray, 2024).

Strengths, limitations, and future directions

Strengths and weakness of this study are considered against Yardley (2000) and Lincoln and Guba (1985) principles. Sensitivity to context (Yardley, 2000) was vital throughout this study due to obvious power imbalances between the researcher and creators on TikTok, who’s publicly posted content is included in this study. Therefore, greater attention was paid to ethics and the protection of TikTok users. As such, all quotes have been paraphrased or described to prevent re-identification in line with the BPS guidelines (2021b). Moreover, in keeping with ‘fair dealing’ as part of Copyright, Designs and Patents Act 1988 (Intellectual Property Office, 2021) and the BPS Code of Human Research Ethics (2021a), minimal data has been used in the write up to ensure greater preservation of privacy.

Additionally, the researcher's active engagement in reflexivity, along with cohesion of researcher's positionality, methodological approach and epistemology aids in the trustworthiness and rigor of this study (Yardley, 2000; Curtin & Fossey, 2007). Moreover, a visual explanation of the analytic process (see Appendix P and Q), paraphrased quotes and descriptions of content enhance transparency and rigor (Constas, 1992), whilst still adhering to ethical considerations. Additionally, the use of multiple different modes of data allowed for triangulation between the data sources (Donkoh & Mensah, 2023; Carter, 2014; Suh, 2021) and inclusion of paraphrased quotes and descriptions helps to demonstrate the importance and credibility of this research (Lincoln & Guba, 1985), whilst prioritising TikTok users' protection.

Some limitations of this study include the lack of collaboration from TikTok users in the construction of themes, which would have increased the rigor (Lincoln & Guba, 1985; Motulsky, 2021), and the relatively small sample of data collected in a cross-sectional method. Moreover, not including still images of videos in results due to ethical considerations, may also limit the clarity and transferability of the findings, which could have implications for the trustworthiness (Guba, 1981).

Although not necessarily a limiting factor to social constructionist research, it is important to note that this study only included data from only public accounts, therefore, neglected the discourse found in more private spheres of the app. Additionally, relying only on hashtags to collect data possibly reduces the data to those who wish for their content to be disseminated, which may yield a specific type of creator. Therefore, discourses captured in this study only reflect a specific subset of discourses in a snapshot of time, which may limit transferability (Lincoln & Guba, 1985). Research has also investigated the function of hashtags and found it is often a feature used for brand marketing (Laucuka, 2018) which may explain why in our data set we saw promotions from creators.

While this study provides insight into the anxiety discourses on TikTok and the role of power, some caution is encouraged when interpreting results. Critical discourse analysis and postmodernist theories have previously been criticised for unclear definitions of “critical” and decisionism (Breeze, 2011). We acknowledge the research teams influence and decision to use specific theories within this current study, and while postmodernist perspectives provided a novel aid in helping us understand complex political relations, we recognise that this is just one interpretation.

Implications

The findings from this study highlight a variety of anxiety discourses, often favouring medicalised expressions, emotional narratives and videos that are aesthetic. Therefore, discourses may work to misrepresent anxiety, possibly through oversimplification or commodification. The oversimplification could then lead to lay people to constructing their own experiences within these understandings, hence make them more vulnerable to self-diagnosis (Nesi, 2022; Corzine & Roy, 2024). This is compounded by research suggesting that sensationalizing anxiety may further blur the lines between normal and disordered (Smith, 2014). Misinformation and overgeneralisation may also influence help-seeking behaviours, with symptoms being either dismissed as common experiences or perceived as more serious than they are.

Additionally, this study highlights potential implications for policy. As such, TikTok is regulated by both platform specific policies such as its Community Guidelines (TikTok, 2024) and wider policy, including the Online Safety Act (2023). These policies aim to protect users from harmful explicit content, such as violence. However, as harmful mental health content is often not as easily identifiable due to being more subtle/ subliminal, as demonstrated by the themes found within this study, policies possibly fail at times to appropriately regulate and manage the dangers associated with online mental health

discourses. Therefore, there is a need for Clinical Psychologists and researchers to share knowledge of the impact of mental health content and be actively involved in wider policy and safety of social media.

Moreover, social media has now become an integral part of our lives and is estimated to have 2.4 billion users by 2029 (Galanis et al., 2025). Hence, there is a growing need for researchers to continue investigating mental health content. However, this study highlights important ethical implications. As such, the BPS Code of Human Research Ethics (2021a) states that researching in public where “the observed would be expected to be observed by strangers” is considered appropriate. However, as discussed in the BPS Ethics Guidelines for Internet-mediated Research (2021b), what is classed as public and private in online spaces is often dynamic. Therefore, researchers must diligently adhere to policy and guidelines and should participate in their continuous development to maximise online safety and the impact of research.

Conclusion

This study contributes novel insights into the anxiety discourses on TikTok through a critical appraisal of both visual and lexical data. From this study, we argue that TikTok and its creators appear to hold vast amounts of power in the digital construction of anxiety, however, the structure of TikTok and methods by which it rewards certain types of posts impact the content creators produce and do it in a way that makes anxiety marketable. Creators with ‘expertise’ are discursively positioned as having power by reinforcing medicalised understanding and offering help and advice. Those with lived experience tend to be discursively positioned as more powerless, portraying emotional experiences and a desire for empowerment. Overall, the neglect of systemic problems allows anxiety discourses on TikTok to continue to disseminate dominant ideologies which support current power structures.

Funding: None

Disclosure statement: The authors report there are no competing interests to declare.

Acknowledgments: None

References

- Albert, C. S., and A., F. Salam. 2013. Critical discourse analysis: Toward theories in social media. *Proceedings of the nineteenth Americas conference on information systems*: 15-17.
- American Psychiatric Association. 2022. *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., text rev). doi: [10.1176/appi.books.9780890425787](https://doi.org/10.1176/appi.books.9780890425787).
- Balcioğlu, Y., S. 2024. Anxiety management strategies on TikTok: a discourse analysis of collective coping mechanisms. *Journal of Mental Health* 33 (5):619-629.
doi:[10.1080/09638237.2024.2390365](https://doi.org/10.1080/09638237.2024.2390365)
- Baldry, A. P., and P., J. Thibault. 2006. *Multimodal transcription and text analysis: A multimedia toolkit and coursebook*: University of Toronto Press.
- Basch, C. H., L. Donelle, J. Fera, and C. Jaime. 2022. Deconstructing TikTok videos on mental health: cross-sectional, descriptive content analysis. *JMIR formative research* 6 (5):e38340. doi:[10.2196/38340](https://doi.org/10.2196/38340)
- Ben-Ari, A., and G. Enosh. 2011. Processes of reflectivity: Knowledge construction in qualitative research. *Qualitative Social Work* 10 (2):152-171.
doi:[10.1177/1473325010369024](https://doi.org/10.1177/1473325010369024).
- Berry, N., F. Lobban, M. Belousov, R. Emsley, G. Nenadic, and S. Bucci. 2017. #WhyWeTweetMH: understanding why people use Twitter to discuss mental health problems. *Journal of medical Internet research* 19 (4):e107.
doi:[10.2196/jmir.6173](https://doi.org/10.2196/jmir.6173)
- Blair, J., and S. Abdullah. 2018. Supporting constructive mental health discourse in social media. In *Proceedings of the 12th EAI International Conference on Pervasive Computing Technologies for Healthcare*: 299-303.

- Bouvier, G. 2022. From 'echo chambers' to 'chaos chambers': Discursive coherence and contradiction in the #MeToo Twitter feed. *Critical Discourse Studies* 19 (2):179-195. doi:10.1080/17405904.2020.1822898
- Bouvier, G., and D. Machin. 2020. Critical discourse analysis and the challenges and opportunities of social media. In *Critical discourse studies and/in communication*, ed. S. Guillem and C. Toula, 39-53: Routledge.
- Breeze, R. 2011. Critical discourse analysis and its critics. *Pragmatics. Quarterly Publication of the International Pragmatics Association (IPrA)* 21 (4):493-525. doi:10.1075/prag.21.4.01bre
- British Psychological Society. 2021a. Code of Human Research Ethics. Accessed July 21, 2025. <https://doi.org/10.53841/bpsrep.2021.infl80>
- British Psychological Society. 2021b. Ethical Guidelines for Internet Mediated Research. Accessed July 21, 2025. <https://doi.org/10.53841/bpsrep.2021.rep155>
- Burr, V. 2015. *Social constructionism*: Routledge.
- Burr, V., and P. Dick. 2017. Social constructionism. In *the Palgrave Handbook of Critical Social Psychology*, ed. B. Gough, 59-80: Macmillan Publishers Ltd. doi: 10.1057/978-1-137-51018-1
- Carter, N. 2014. The use of triangulation in qualitative research. *Oncology Nursing Forum* 41 (5): 545-547. doi: 10.1188/14.ONF.545-547
- Cisney, V. W., and N. Morar, Eds. 2020. *Biopower: Foucault and beyond*: University of Chicago Press.
- Clark, D. M. and A. Wells. 1995. A cognitive model of social phobia. In *Social Phobia: diagnosis, assessment and treatment*, ed. R. G., Heimberg, M. R., Liebowitz, D. A. Hope, and F. R. Schneier, 69-93. New York: Guilford Press.

- Cohen, B. 2017. *Routledge International Handbook of Critical Mental Health*: Taylor & Francis Group.
- Cohen, B. M. 2016. *Psychiatric hegemony: A Marxist theory of mental illness*: Palgrave Macmillan Publishers Ltd. doi: 10.1057/978-1-137-46051-6
- Constas, M. A. 1992. Qualitative analysis as a public event: The documentation of category development procedures. *American Educational Research Journal* 29 (2):253-266.
[doi:10.3102/00028312029002253](https://doi.org/10.3102/00028312029002253)
- Copyright, Designs and Patents Act 1988, c.48 (UK).
<https://www.legislation.gov.uk/ukpga/1988/48/contents>
- Corzine, A., and A. Roy. 2024. Inside the black mirror: current perspectives on the role of social media in mental illness self-diagnosis. *Discover Psychology* 4 (40):1-9.
[doi:10.1007/s44202-024-00152-3](https://doi.org/10.1007/s44202-024-00152-3)
- Curtin, M., and E. Fossey. 2007. Appraising the trustworthiness of qualitative studies: Guidelines for occupational therapists. *Australian occupational therapy journal* 54 (2):88-94. [doi:10.1111/j.1440-1630.2007.00661.x](https://doi.org/10.1111/j.1440-1630.2007.00661.x)
- Danielsson, K., and S. Selander. 2021. Semiotic modes and representations of knowledge. In *Multimodal Texts in Disciplinary Education: A Comprehensive Framework*, ed. K. Danielsson and S. Selander, 17-23: Springer Nature. doi:10.1007/978-3-030-63960-0
- Davidson, M. M., M. S. Butchko, K. Robbins, L. W. Sherd, and S. J. Gervais. 2016. The mediating role of perceived safety on street harassment and anxiety. *Psychology of Violence* 6 (4):553. [doi:10.1037/a0039970](https://doi.org/10.1037/a0039970).
- Dodgson, J. E. 2019. Reflexivity in qualitative research. *Journal of Human Lactation* 35 (2):220-222. [doi:10.1177/0890334419830990](https://doi.org/10.1177/0890334419830990).

- Donkoh, S., and J. Mensah. 2023. Application of triangulation in qualitative research. *Journal of Applied Biotechnology and Bioengineering* 10 (1):6-9. doi: 10.15406/jabb.2023.10.00319
- Drioli-Phillips, P. G., M. Oxlad, A. LeCouteur, R. Feo, and B. Scholz. 2021. Men's talk about anxiety online: Constructing an authentically anxious identity allows help-seeking. *Psychology of Men & Masculinities* 22 (1):77-87.
- Drioli-Phillips, P. G., M. Oxlad, R. Feo, B. Scholz, and A. LeCouteur. 2020. "I feel abused by my own mind": Themes of control in men's online accounts of living with anxiety. *Qualitative Health Research* 30 (13):2118-2131. doi:10.1177/1049732320942147.
- Eldh, A. C., L. Årestedt, and C. Berterö. 2020. Quotations in qualitative studies: Reflections on constituents, custom, and purpose. *International Journal of Qualitative Methods* 19 :1-6. <https://doi.org/10.1177/160940692096926>
- Engel, E., S. Gell, R. Heiss, and K. Karsay. 2024. Social media influencers and adolescents' health: A scoping review of the research field. *Social Science & Medicine* 340, 116387. doi: 10.1016/j.socscimed.2023.116387
- Esposito, L., and F.M. Perez. 2014. Neoliberalism and the commodification of mental health. *Humanity & Society* 38 (4):414-442. doi:10.1177/0160597614544958
- Foucault, M. 1980. *Power/Knowledge*. Trans. Colin Gordon: Pantheon.
- Foulkes, L., and J.L. Andrews. 2023. Are mental health awareness efforts contributing to the rise in reported mental health problems? A call to test the prevalence inflation hypothesis. *New Ideas in Psychology* 69 (1):101010. doi.org/10.1016/j.newideapsych.2023.101010
- Fusch, P. I., and L.R. Ness. 2015. Are we there yet? Data saturation in qualitative research. *The qualitative report* 20 (9):1408-1416.

- Galanis, P., A. Katsiroumpa, Z. Katsiroumpa, P. Mangoulia, P. Gallos, I. Moisoglou, and E. Koukia. 2025. Association between problematic TikTok use and mental health: A systematic review and meta-analysis. *AIMS Public Health*, 12 (2):491-519.
<https://doi.org/10.3934/publichealth.2025027>
- Gallagher, L. 2021. Welcome to AnxietyTok: an empirical review of peer support for individuals living with mental illness on social networking site TikTok. *Veritas Villanova R J* 3 (1):24-32.
- Guba, E. G. 1981. Criteria for assessing the trustworthiness of naturalistic inquiries. *Ectj* 29 (2):75-91. doi:10.1007/BF02766777
- Harper, D. J. 1995. Discourse analysis and 'mental health'. *Journal of mental health* 4 (4):347-358. doi:10.1080/09638239550037406
- Intellectual Property Office. 2021. *Exceptions to Copyright* [guidance]. GOV.UK.
<https://www.gov.uk/guidance/exceptions-to-copyright#fair-dealing>
- Issaka, B., E. A.K Aidoo, S.F. Wood, and F. Mohammed. 2024. “Anxiety is not cute” analysis of twitter users’ discourses on romanticizing mental illness. *BMC psychiatry* 24 (221):1-16. doi:10.1186/s12888-024-05663-w
- Jadayel, R., K. Medlej, and J.J. Jadayel. 2017. Mental disorders: a glamorous attraction on social media. *Journal of Teaching and Education* 7 (1):465-476.
- Javaid, S. F., I. J. Hashim, M. J. Hashim, E. Stip, M.A. Samad, and A.A. Ahbabi. 2023. Epidemiology of anxiety disorders: global burden and sociodemographic associations. *Middle East Current Psychiatry* 30 (44):1-11. doi:10.1186/s43045-023-00315-3
- Klug, D., Y. Qin, M. Evans, and G. Kaufman. 2021. Trick and please. A mixed-method study on user assumptions about the TikTok algorithm. In *Proceedings of the 13th ACM Web Science Conference*: 84-92.

- Kress, G., and T. Van Leeuwen. 2001. *Multimodal Discourse: The Modes and Media of Contemporary Communication*. London: Arnold.
- Kress, G., and T. Van Leeuwen. 2021. *Reading images: The grammar of visual design*. 3rd ed: Routledge.
- Laucuka, A. 2018. Communicative functions of hashtags. *Economics and Culture* 15 (1):56-62. doi:10.2478/jec-2018-0006
- Ledin, P., and D. Machin. 2018. *Doing visual analysis: From theory to practice*: Sage
- Ledin, P., and D. Machin. 2020. *Introduction to multimodal analysis*: Bloomsbury Publishing.
- Li, Y., M. Guan, P. Hammond, and L. E. Berrey. 2021. Communicating COVID-19 information on TikTok: a content analysis of TikTok videos from official accounts featured in the COVID-19 information hub. *Health education research* 36 (3):261-271. doi:10.1093/her/cyab010
- Lincoln, Y. S., and E. G. Guba. 1985. *Naturalistic inquiry*: Sage Publications.
- Lyons, A. C. 2000. Examining media representations: Benefits for health psychology. *Journal of health psychology* 5 (3):349-358.
doi:10.1177/135910530000500307
- Machin, D., and A. Mayr. 2023. *How to do critical discourse analysis: A multimodal introduction*: Sage Publications.
- McMullan, R. D., D. Berle, S. Arnáez, and V. Starcevic. 2019. The relationships between health anxiety, online health information seeking, and cyberchondria: Systematic review and meta-analysis. *Journal of affective disorders* 245 (1):270-278.
doi:10.1016/j.jad.2018.11.037

- Mordecai, C. 2023. # anxiety: A multimodal discourse analysis of narrations of anxiety on tiktok. *Computers and Composition* 67 (1):102763.
[doi:10.1016/j.compcom.2023.102763](https://doi.org/10.1016/j.compcom.2023.102763)
- Motulsky, S. L. 2021. Is member checking the gold standard of quality in qualitative research?. *Qualitative Psychology* 8 (3):389. [doi:10.1037/qup0000215](https://doi.org/10.1037/qup0000215)
- Murray, C. 2024. Man Or Bear? Many Women Say They'd Rather Be Stuck In The Woods With A Bear In Latest Viral TikTok Debate. Accessed February 23, 2025.
<https://www.forbes.com/sites/conormurray/2024/05/03/man-or-bear-many-women-say-theyd-rather-be-stuck-in-the-woods-with-a-bear-in-latest-viral-tiktok-debate/#:~:text=Key%20Facts,domestic%20violence%20and%20sexual%20assault.>
- Nesi, J. 2022. Can TikTok diagnose your anxiety? Accessed 26, March 2024.
<https://technosapiens.substack.com/p/mentalhealthtiktok>
- Online safety Act 2023, c.50 (UK). <https://www.legislation.gov.uk/ukpga/2023/50>
- Oxford University Press. n.d. Paraphrase. Accessed July 20, 2025.
<https://doi.org/10.1093/OED/9447560396>
- Pavelko, R. L., and J. G. Myrick. 2015. That's so OCD: The effects of disease trivialization via social media on user perceptions and impression formation. *Computers in Human Behavior* 49 (1):251-258. [doi:10.1016/j.chb.2015.02.061](https://doi.org/10.1016/j.chb.2015.02.061)
- Pavlova, A., and P. Berkers. 2020. Mental health discourse and social media: Which mechanisms of cultural power drive discourse on Twitter. *Social Science & Medicine* 263 (1):113250. [doi:10.1016/j.socscimed.2020.113250](https://doi.org/10.1016/j.socscimed.2020.113250)
- Pavlova, A., and P. Berkers. 2022. "Mental health" as defined by Twitter: Frames, emotions, stigma. *Health communication* 37 (5):637-647. [doi:10.1080/10410236.2020.1862396](https://doi.org/10.1080/10410236.2020.1862396)

- Pretorius, C., D. Chambers, B. Cowan, and D. Coyle. 2019. Young people seeking help online for mental health: cross-sectional survey study. *JMIR mental health* 6 (8):e13524. [doi:10.2196/13524](https://doi.org/10.2196/13524)
- Rathy, A. 2023. A Systematic Review: The Influence of TikTok Contents and its Effects towards Mental Health among Youth in Malaysia. *Journal of Media and Information Warfare* 16 (1):1-13.
- Robinson, P., D. Turk, S. Jilka, and M. Cella. 2019. Measuring attitudes towards mental health using social media: investigating stigma and trivialisation. *Social psychiatry and psychiatric epidemiology* 54 (1):51-58. [doi:10.1007/s00127-018-1571-5](https://doi.org/10.1007/s00127-018-1571-5)
- Rose, N. S. and J. M. Abi-Rached. 2013. *Neuro: The New Brain Sciences and the Management of the Mind*. Princeton, NJ: Princeton University Press
- Sadagheyani, H. E., and F. Tatari. 2021. Investigating the role of social media on mental health. *Mental Health and Social Inclusion* 25 (1):41-51. [doi:10.1108/MHSI-06-2020-0039](https://doi.org/10.1108/MHSI-06-2020-0039)
- Saunders, B., J. Sim, T. Kingstone, S. Baker, J. Waterfield, B. Bartlam, et al. 2018. Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity* 52 :1893-1907. [doi:10.1007/s11135-017-0574-8](https://doi.org/10.1007/s11135-017-0574-8)
- Schaadhardt, A., Y. Fu, C. G. Pratt, and W. Pratt. 2023. “Laughing so I don’t cry”: How TikTok users employ humor and compassion to connect around psychiatric hospitalization. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*: 1-13.
- Smith, D. T. 2014. The diminished resistance to medicalization in psychiatry: Psychoanalysis meets the medical model of mental illness. *Society and Mental Health* 4 (2):75-91. [doi:10.1177/2156869313512211](https://doi.org/10.1177/2156869313512211).

- Stein, M. B., and D. J. Stein. 2008. Social anxiety disorder. *The lancet* 371 (9618):1115-1125. [doi:10.1016/S0140-6736\(08\)60488-2](https://doi.org/10.1016/S0140-6736(08)60488-2)
- Stupinski, A. M., T. Alshaabi, M. V. Arnold, J. L. Adams, J. R. Minot, M. Price, et al. 2022. Quantifying changes in the Language used around Mental Health on Twitter over 10 years: Observational Study. *JMIR mental health* 9 (3):e33685. [doi:10.2196/33685](https://doi.org/10.2196/33685)
- Suarez-Lledo, V., and J. Alvarez-Galvez. 2021. Prevalence of health misinformation on social media: systematic review. *Journal of medical Internet research* 23 (1):e17187. [doi:10.2196/17187](https://doi.org/10.2196/17187)
- Suh, E. K. 2021. Adoptees SPEAK: a multimodal critical discourse analysis of adult Korean adopted persons' adoption narratives on Instagram. *Critical Inquiry in Language Studies* 18 (1):65-84. [doi:10.1080/15427587.2020.1796486](https://doi.org/10.1080/15427587.2020.1796486)
- TikTok. 2024. *Community Guidelines* [guidelines]. TikTok. <https://www.tiktok.com/community-guidelines/en>
- Tudehope, L., N. Harris, L. Vorage, and E. Sofija. 2024. What methods are used to examine representation of mental ill-health on social media? A systematic review. *BMC psychology* 12 (1):105. [doi:10.1186/s40359-024-01603-1](https://doi.org/10.1186/s40359-024-01603-1)
- Vidamaly, S., and S. L. Lee. 2021. Young Adults' Mental Illness Aesthetics on Social Media. *International Journal of Cyber Behavior, Psychology and Learning* 11 (2):13-32. [doi:10.4018/IJCBPL.2021040102](https://doi.org/10.4018/IJCBPL.2021040102)
- Wandel, T. 2001. The power of discourse: Michel Foucault and critical theory. *Journal for Cultural Research* 5 (3):368-382. [doi:10.1080/14797580109367237](https://doi.org/10.1080/14797580109367237)
- Yardley, L. 2000. Dilemmas in qualitative health research. *Psychology and Health* 15 (2):215- 228. [doi:10.1080/08870440008400302](https://doi.org/10.1080/08870440008400302)

- Zhang, Y., J. Fu, J. Lai, S. Deng, Z. Guo, C. Zhong, ... and Y. Wu. 2024. Reporting of ethical considerations in qualitative research utilizing social media data on public health care: Scoping review. *Journal of Medical Internet Research*, 26: e51496.
doi:10.2196/51496
- Zhao, S., E. Djonov, A. Björkvall, and M. Boeriis. 2017. *Advancing multimodal and critical discourse studies*: Taylor & Francis.
- Zheluk, A. A., J. Anderson, and S. Dineen-Griffin. 2022. Adolescent anxiety and TikTok: An exploratory study. *Cureus 14* (12):e32530. doi:[10.7759/cureus.32530](https://doi.org/10.7759/cureus.32530)
- Ziebland, S. U. E., and S. Wyke. 2012. Health and illness in a connected world: how might sharing experiences on the internet affect people's health?. *The Milbank Quarterly* 90 (2):219-249. doi:[10.1111/j.1468-0009.2012.00662.x](https://doi.org/10.1111/j.1468-0009.2012.00662.x)

Chapter 5: Extended Methodology, Results and Reflexivity

This chapter includes additional details regarding the methodology, results, and author reflections of the above empirical paper.

Methods

Ontology and epistemology

For the empirical research a social constructionist epistemological position was adopted, this stance believes that “our knowledge of the world, including our understanding of human beings, is a product of human thought rather than grounded in observable, external reality” (Burr, 2015 p.222). Social constructionism believes that reality cannot be understood separately from social practices, language and discourse, which form the basis of how we construct knowledge (Fairclough, 2010). Therefore, when applied to online anxiety discourse would suggest that they are not reflecting an objective reality but rather constructing one.

The social constructionist position also gives privilege to the role of power in the construction of anxiety, therefore, arguing that anxiety is largely influenced by wider societal structures (Harper, 1995). Finally, this position challenges the current dominant and accepted ideas in psychology and psychiatry, which believe that anxiety is made up of biopsychosocial factors and can be treated through effective interventions and medications (Bandelow, Michaelis & Wedekind, 2017).

Multimodal Critical Discourse Analysis

A recent systematic review by Tudehope et al (2024) investigated the variety of methodologies used to explore mental health content on social media. The most common method found was a content analysis, which works favourably when trying to analyse a breath of data, however, can lack depth. The current empirical study, however, required a more in-depth critical understanding, so a different approach was sought after.

MMCDA has typically been used in the field of linguistics (Machin & Mayr, 2023; Machin, 2013) and has only more recently been applied to visual based apps such as TikTok (Ting, 2021). Considering the authors epistemological stance, the need to analyse multiple modes of data and previous research on this topic lacking a critical lens (Mordecai, 2023), a MMCDA was chosen as an appropriate methodology. Other methods were also considered for use within this study such as Polytextual thematic analysis (Gleeson, 2011; Gleeson, 2020), considerations of this are discussed later in the critical discussion chapter.

Multimodal Critical Discourse Analysis (MMCDA) is an extension of critical discourse analysis (CDA) and has stemmed from Halliday's theory (Halliday, 1975; Halliday, 1978) as well as other theoretical approaches used for CDA (Fairclough, 1992; Fairclough, 2013). However, MMCDA has since evolved into its own methodology with Kress and Van Leeuwen's scholarship (Kress & Van Leeuwen, 2001).

MMCDA is founded upon a social semiotic approach to language, which suggests that we construct meaning based on the semiotic resources available to us. This might for example be visual resources such as colour and lighting, or linguistic resources found within our communication. Through analysing semiotic choices, we can then begin to understand more about the meaning people are trying to convey and how this meaning might then contribute to wider discourses (Machin & Mayr, 2023).

Data collection

Ten videos per hashtag were selected due to previous research having analysed similar amounts (Salafuddin, 2022; Mordacai, 2023). Although some previous research has investigated up to 60 videos (Ting, 2021), this didn't feel feasible within the scope of this project. During initial scoping, we also considered other hashtags such as: #highfunctioninganxiety #anxietyrelief #anxietyattacks.

TikTok presents information in a very disjointed manner; pockets of information can be found on screen, in the description section and auditorily. These pockets of information contribute to the overall narrative and discourse that is being constructed through the video. There is then a separate comment section, which when opened blocks the video. Therefore, the comment section is structured as a separate entity from the video itself. The disjointedness of the information posed a dilemma for analysis. Therefore, we made a pragmatic decision to analyse the comments separately, due to there not being a reciprocal interaction between the video and comments. Instead, the comments reflect user engagement and opinions about the videos. As a detailed analysis of the comments was not the primary aim of this study, the comments were analysed descriptively to allow for understanding of themes and narratives and to fit within the feasibility and scope of the project.

Patient and public involvement (PPI)

Following ethical approval of the study but prior to data collection, Patient and Public Involvement (PPI) were identified through researcher team's connections and then snowballing, to provide feedback on the project aims and methods.

Following PPI consultation, it was evident that the initial hashtag proposed by the authors, #highfunctioninganxiety, was not the most relevant or appropriate hashtag. PPI representatives expressed that they were unfamiliar with the term; only associating it with conditions such as Autism (Tebartz et al., 2013). Additionally, high functioning anxiety is not a recognised clinical disorder, therefore, authors also felt that it may not have as much application or implications to clinical settings. After further consultation with PPI we decided to broaden our understanding of anxiety through the inclusion of #socialanxiety in replacement of #highfunctioning (See Appendix R for amendment).

Saturation

Saturation refers to the point in which the authors felt like the analysis had reached a natural end. Saturation in this paper follows Urqhart's (2013) definition "the point in coding when you find that no new codes occur in the data" (Urqhart, 2013. p.194 as quoted in Saunders et al., 2018). The process of saturation was also carried over to the development of themes, involving exploring themes in-depth, along with conflicts and alternative interpretations. Once no new themes were found and saturation was agreed in supervision, analysis was deemed to be comprehensive and analysis stopped.

Quality appraisal

Table 1.

Examples of adherence to Yardley (2000) principles within this study

Yardley (2000)**Study adherence****Principles****Sensitivity to context**

- Throughout the study consideration was given to the wider context, including creator demographics and the social context at the time of data retrieval, i.e. what was in the news/ trending more widely on the app. Additionally, the researcher was conscious of her own bias and context which may have impacted the analysis. Implications of this were considered through a reflexive diary and supervision.
- The author paid particular attention to the power imbalance between the researcher and creators of the videos. Hence, extra consideration was taken regarding ethics.
- During the study, the author considered the broader societal context at the time the videos were posted and how this may have influenced video content and, consequently, interpretations during the analysis.

Commitment and rigor

- This study was able to look at data in depth, not only considering small units of data such as word choice but also thinking more broadly about aspects of power and other identities that maybe present within the data.
- The use of multiple forms of data such as language, sounds, visual modes allowed for triangulation (Carter,

	2014) and provided a greater depth to theme development.
Transparency and coherence	• Regular supervision and keeping a reflexive diary improved data interpretation. • The authors of this research have outlined the exact process that was followed to help inform future research, seen in Appendix P. • Additionally details of depictions, theme development and coding can be seen in Appendix S. • Consideration for researchers epistemological and ontological stance, research question and appropriate methodology to ensure coherence.
Impact and importance	• This study has begun to highlight major power differentials that are being carried out in everyday conversations about mental health. • This research has discussed the practical implications of the findings which could have significant clinical importance.

Ethical considerations

This study was informed by the British Psychological Society (2021) ethical guidelines for internet- mediate research. Previously researchers have been viewed as ‘lurking’ which could be seen as exploitative; therefore, ethics for this study have been carefully considered due to the complexity of social media (Berry et al., 2017; Franzke et al., 2019).

Firstly, as TikTok is not in the public domain and is owned by the Chinese company Byte Dance, TikTok videos are protected by copyright law, which means that the creators own the rights to their content. Therefore, this research managed data in accordance with Data Protection act (2018) and General Data Protection Regulation (GDPR). All data was stored securely, anonymised and was deleted after completion of the study.

Secondly, there was careful consideration for users' confidentiality and privacy, as this study included posts that were publicly available. Therefore, data from TikTok was anonymised before being stored, meaning that no identifiable information such as images or usernames were used in this study. Additionally, all data was stored and analysed using a coding system to ensure anonymity. Previous research into TikTok and other social media have followed similar precautions (Mordecai, 2023; Zheluk et al., 2022; Walker et al., 2018), including choosing to paraphrase quotes for better preservation of privacy (Zhang et al., 2024). Although previous research has blurred faces to share content in the write up (Johnson et al., 2019), for the extra protection of users this study does not include any pictures, screenshots or direct quotes. Moreover, when sharing examples of coding, the analytic process and codebooks within supplementary materials (Appendices A, S, T and U, respectively), only minimal information has been included, and all identifiable information has been removed to reduce traceability and protect users' privacy (BPS, 2021b).

Considerations were taken around videos pertaining to personal experience and self-disclosure and ensuring protection of privacy. Additionally, if the video was removed after extraction but before analysis then the data was removed from the analysis. However, once analysis had started data couldn't be removed but remained anonymised.

This study did not include identifiable participants; however, researchers were mindful of the ethical dilemmas of researching on social media and remained active in considering TikTok user safety and confidentiality.

Additional Results

Comments

Concept maps illustrating themes and codes for comments under #anxiety and #socialanxiety can be seen in Figure 1 and 2, respectively. An important finding seen across the comment sections for both hashtags, was the theme of disagreeing/ challenging the video content. This theme was found mostly under videos presented by experts rather than the lay person. Comments reflecting self-identification and users expressing their own experiences of anxiety were more common under videos showing lived experiences. Hence, users tended to respond to content differently depending on who the creator was. One possible explanation could be due to how the creators establish credibility. Experts gain credibility through professional backgrounds, microphones, and honorifics, whilst remaining emotionless and distant from the users. Whereas the lay person establishes credibility through authenticity and showing emotional experiences. This emotional vulnerability may create more of an intimate relation between creators and users of the app, hence why comments tended to reflect users being more open with their own experiences under lived experience videos (see Appendix T and U for codebooks).

Figure 1.

Concept map of themes and codes from comments under #anxiety

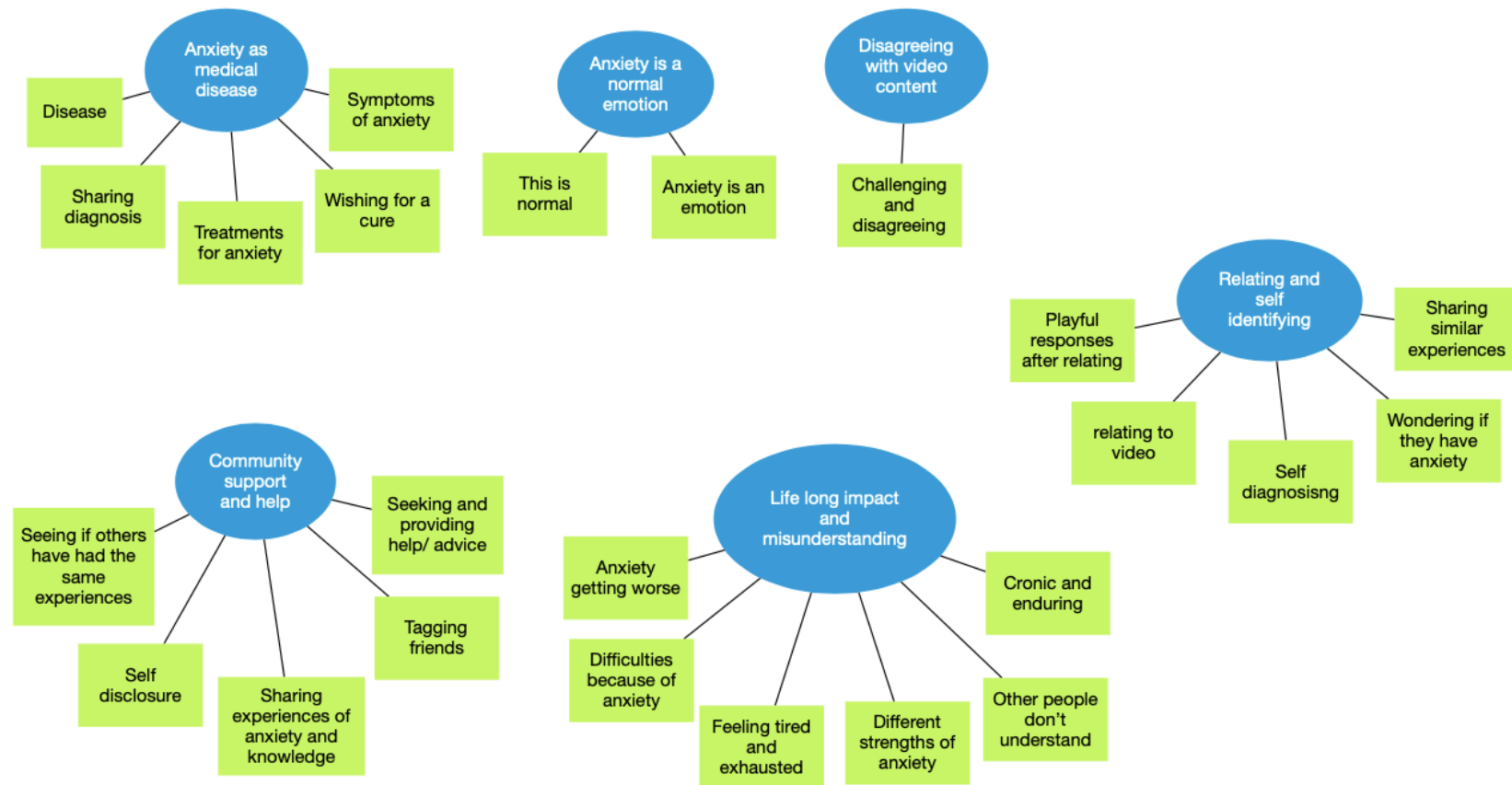
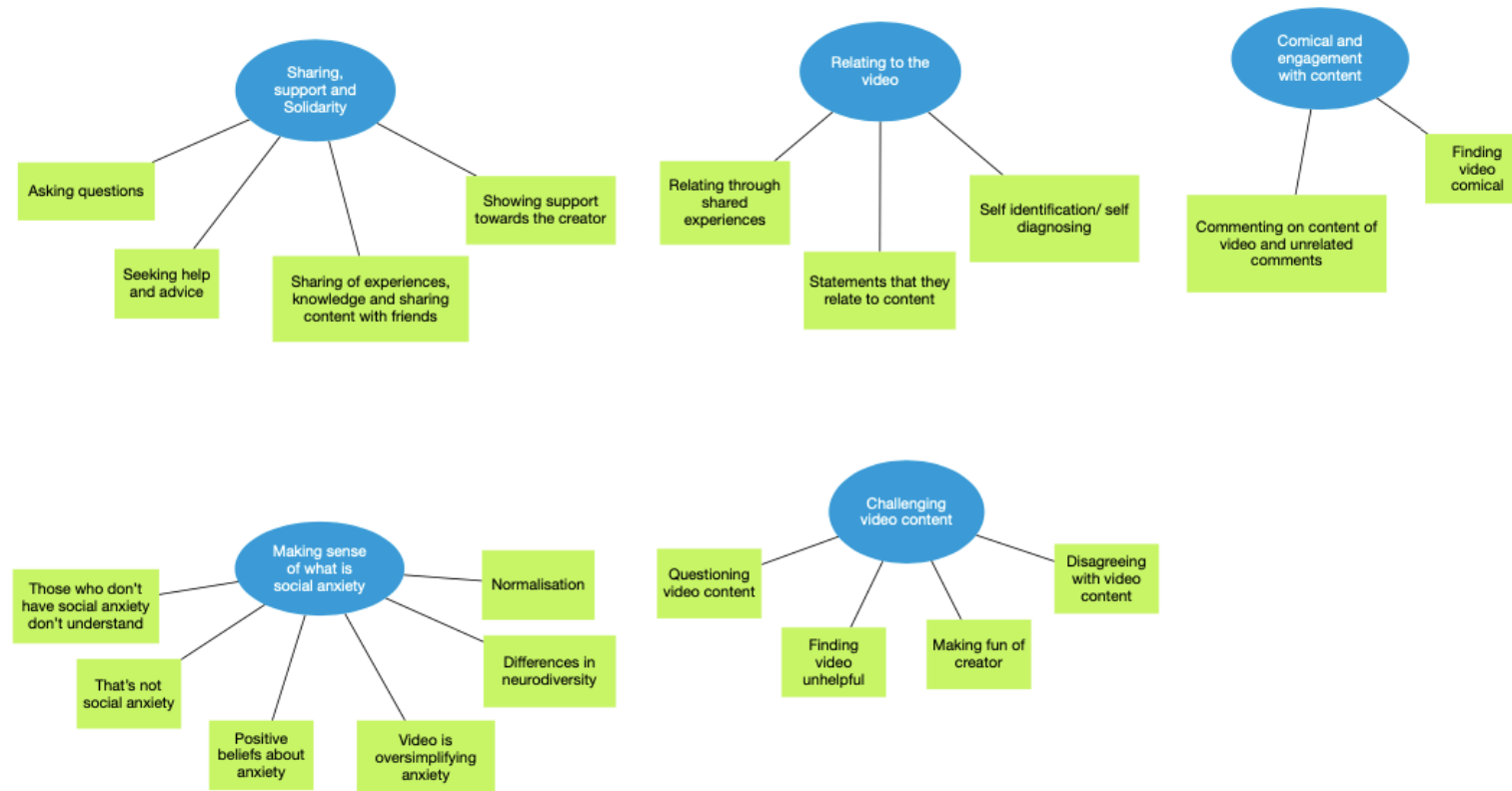


Figure 2.

Concept map of themes and the codes from comments under #socialanxiety



Reflexivity

Reflexivity refers to the process by which a researcher actively develops an awareness of their own role in the research (Haynes, 2012). Reflexivity is vital in qualitative research due to the relationship between the researcher and the data (Palaganas et al., 2017), which means that it is important for the researcher to engage in an active process of reflection to understand their influence in co-constructing meaning (Dodgson, 2019). Reflexivity is also important as it helps to establish rigor, transparency and can improve trustworthiness (Dodgson, 2019). Throughout this project a reflexive diary was kept, along with mind maps, memos and supervision to aid in the process of reflexivity.

Personal reflections prior to starting the project

Before beginning the project, I spent time considering the intersectionality between my own social GRACES (Burnham, 2018) in relation to anxiety disorders and social media. Through the process of reflexivity, I began to consider how my own experiences and identities may at times guide and influence the way in which I want to contribute to the research.

Reflections during data collection

I was mindful throughout of the privilege I held in being able to access TikTok. I also considered how my own privilege will likely impact data collection, such as through the Virtual Private Network and area code that I used to set up the new TikTok accounts. I also reflected on my own access to power, specifically during analysis and in my interpretation of creator's videos, without any consultation with them. These reflections fostered a greater awareness of the apparent power imbalance held throughout the research process, which often generated difficult feelings.

Moreover, during data extraction, I also remained mindful of the wider discourse on TikTok. I noticed that there was a broad discourse regarding women's safety (Davidson et al.,

2016), which often appeared in trending videos where women would comment on whether they would rather be left alone in a wood with a man or a bear (Murray, 2024). Additionally, during the time of data collection, I also observed female creators sharing videos discussing the fear of walking alone at night and expressing the daily worries they experience regarding their safety. This was, therefore, contributing to a wider gendered anxiety discourse on TikTok related to female safety.

Furthermore, wider societal discourses and contexts were also considered, including the continued impact of the cost-of-living crisis and the ongoing conflict between Israel and Palestine. It was important to acknowledge these contexts to provide an understanding of the social and political landscape in which the anxiety discourses were situated at time of data collection. The impact of wider discourses and contexts were explored in supervision, and consideration was given to how they may have impacted both societal stress and anxiety, and the construction of anxiety on TikTok. Additionally, supervision helped ensure other discourses and alternative understandings were acknowledged.

Reflections during analysis

Analysis at times felt very uncomfortable, I questioned and battled with uncertainty and privilege that I felt. Supervision was key in fostering new understandings both practically about the methodology and analysis but also personally about my own intolerance to uncertainty. Learning to sit with the process of theme development, staying close to the data whilst also considering wider factors.

Extracts drawn from reflexive diary:

I am feeling particularly drawn to ideas around how so many of the female creators that are displaying emotional distress are also wearing makeup. Since noticing it, I have begun to feel quite angry as a woman it makes me feel that even in times of emotional distress women are only accepted if they look and conform to western

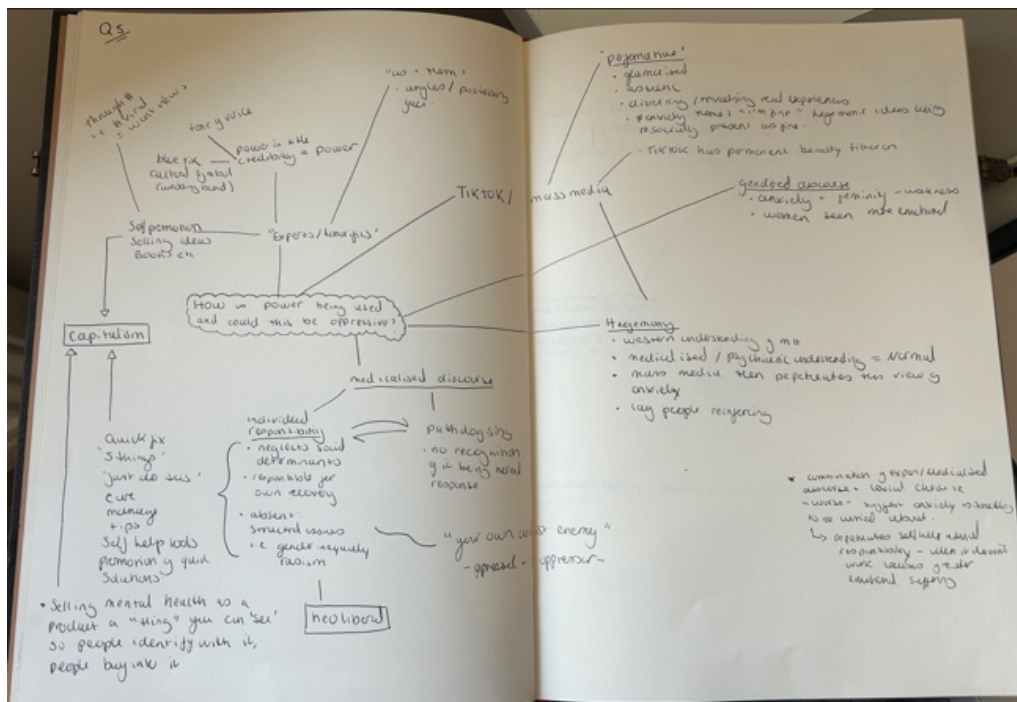
beauty standards. This is something I will continue to be mindful of, in order to not overemphasise this pattern at the detriment of missing other patterns and discourses. But also recognising the feelings that it evoked in me as a 27 year old female, but how If I was maybe 15 how my feelings and opinions of the video may have been different. Rather than anger I may instead have felt a sense of awe and admiration to want to look like her, possibly empathy.

I am beginning to recognise my dual identities within the process of analysis, specifically after watching videos presented by “experts”. I feel that as a researcher I want to look at the data somewhat objectively and observant. But as a clinician working within mental health I can’t help but feel somewhat frustrated by the descriptions of anxiety being presented. Their accounts feel oversimplified and somewhat misleading, and as a health care professional I feel that we should have some responsibility in the information we share

I am starting to notice that as I have already analysed some videos, I am expecting to find similar things in videos I am now beginning to assess. I didn’t initially consider how as I am analysing videos one after another, the analysis of earlier videos may then be impacting the codes and themes for the following. This process feels somewhat unavoidable as analysing them all at the same time would likely be confusing and lead to incoherent narratives. However, it is something I will take to supervision to reflect further on.

Figure 3.

Mind map constructing ideas and reflections during the analysis



Chapter 6: Discussion and Critical Evaluation Chapter

This chapter discusses the main findings from both the systematic review and the empirical project and provides an overall critical evaluation of the work undertaken, outlining strengths, limitations, clinical implications, recommendations for future research and finally author reflections.

This portfolio was developed after identifying clear gaps in the literature. To our knowledge there are no other systematic reviews for social anxiety measures using the Consensus-based Standards for the selection of health Measurement Instruments (COSMIN) (Mokkink et al., 2024), demonstrating a disappointing and poor synthesis of the psychometric evidence for social anxiety measures against a standardised framework. In the absence of high-quality reviews and given that these measures are frequently being used to inform clinical and research practice, we sought to begin to fill this gap. Additionally, despite the accelerated expansion of social media and research identifying a connection between social media and mental health (Keles et al., 2020; Foulkes & Andrews, 2023; O'Day & Heimberg, 2021), there is still limited critical understanding of anxiety discourses on TikTok. Overall, through the application of two divergent philosophical paradigms, this portfolio aimed to inform the use of social anxiety measures in clinical practice and contribute to our knowledge of online anxiety discourses.

Summary of Main Findings

Systematic Review

The systematic review aimed to synthesise and evaluate the evidence of the psychometric properties of the Mini-Social Phobia Inventory (Mini-SPIN) and its versions, to determine if they are psychometrically robust (valid, reliable and responsive) measures for social anxiety. The systematic review followed the COSMIN guidelines (Mokkink et al.,

2024) and retrieved evidence for the Mini-SPIN (Connor et al., 2001), the Mini-SPIN-R (Aderka et al., 2013) and six language versions (German, Spanish, Swedish, Portuguese, Norwegian and Finnish). In line with COSMIN guidelines, the review highlighted limitations in the development of the Mini-SPIN due to finding no development studies. The review also found insufficient evidence to determine the dimensionality and internal structure of the Mini-SPIN or its versions. Moreover, subjective rater reviews of content validity identified a limitation in the comprehensiveness of the Mini-SPIN due to the omission of an item on physiological symptoms of anxiety. However, this conclusion was reached based on the assumption that the Mini-SPIN is assessing the same construct as its longer counterpart (Conner et al., 2000).

This review also highlighted some other important findings. Firstly, throughout this review we encountered heterogeneity within terms used to describe psychometric properties. For example, Fogliati et al (2016) describes discriminative validity within their study, however, according to COSMIN this referred to criterion validity (Mokkink et al., 2024). Findings outlined by Mokkink et al (2010) also identified that there can be variability in expert opinions when determining psychometrics. The implications of this are discussed in detail later. Secondly, the systematic review also found that abbreviated measures will struggle to meet COSMIN standards when they have been developed from their longer counterparts, as they have not undergone typical PROM development through concept elicitation and pilot testing. This is an important finding as it means that brief measures developed this way will inherently be of lower quality according to COSMIN standards, the implications and consideration for PROM development are discussed in more detail later.

Overall, due to no evidence of content validity through development studies and insufficient evidence to support the measures' internal structure, the Mini-SPIN and its versions did not meet COSMIN standards and thus we were not able to recommend their use.

Therefore, this review concluded that currently the Mini-SPIN and its versions cannot be considered reliable, valid or responsive measures of social anxiety.

Empirical project

The empirical project used a qualitative design applying a Multimodal Critical Discourse Analysis (MMCDA), underpinned by a social constructionist stance, to videos and comments under #anxiety and #socialanxiety on TikTok. Additionally, a critical Marxist perspective was applied to the themes derived from analysis to understand the role of power. Findings revealed anxiety was depicted through lived experience videos and psychoeducation videos. Through analysis of visual and lexical data from videos five discursive themes were found: Medicalised discourse, self- promotion/self-help, emotional turmoil, empowerment and responsibility. Separate themes derived from comments under #anxiety included: anxiety as a medical disease, anxiety as a normal emotion, community and support, disagreeing, lifelong impact and misunderstanding, relating and self-identification. Comments on lived experience videos were found to often mirrored the creators' self-disclosures, whereas comments on psychoeducation videos tended to fall into the theme of disagreeing with the video.

For #socialanxiety videos depicted social anxiety through lived experiences, psychoeducation and light-hearted videos. From the videos three discursive themes were found: Trivialising, define and conquer and power and control. Comments for social anxiety videos were grouped into five themes: sharing, support and solidarity, relating, comical, trying to make sense of social anxiety and challenging video content.

The current findings revealed that TikTok and its users hold power over the construction of anxiety, however, TikTok will prioritise certain discourses which often result in trending discourse containing themes of individual responsibility, sharing of personal experiences and physical tropes. TikTok discourses continue to disseminate dominant

ideologies and support current power structures but also offers a space for people to express personal narratives. Overall, results were mostly consistent with previous literature, however, this research contributes a novel critical perspective suggesting a possible commodification of anxiety on TikTok.

Combined Discussion

Together the papers of this thesis highlight the challenges involved in conceptualising and measuring anxiety and the crucial role of language. The systematic review highlighted how measures such as the Mini-SPIN rely on questions to capture specific symptoms, while the empirical paper demonstrated how language serves as a vehicle for sharing understandings and experiences of anxiety in digital spaces. Together both papers show how variability in language, whether through item content or discourse, can impact the construct that we are trying to capture.

The empirical research found that language within anxiety discourses varied, from expressions of emotions to physical tropes. Moreover, both papers identified a possible oversimplification and reductionism, as the Mini-SPIN contains only three items, whilst the empirical paper found that anxiety was often reduced to a few physical signs and symptoms. Together both papers highlight that there is variation in the conceptualisations of anxiety, and that the conceptualisations are not always well evidence in measurement tools.

The findings from this thesis highlight how the conceptualisations of anxiety may have possibly become somewhat broad and undefined, which may also explain why there is variability within social anxiety measures. The development of broad conceptualisations of anxiety could be explained by previous literature by Haslam (2016) who coined the phenomenon ‘concept creep’, which they defined as the expansion of definitions leading to broad generalised conceptual understandings to develop. Haslam et al (2020) later defined two methods in which ‘concept creep’ may occur, “horizontal creep” where concepts extend

to form new constructs, or “vertical creep” where the concepts begin to include symptoms that are less severe and so the construct then becomes more generalised.

Speerforck et al (2024) introduced a model that explored the relationship between ‘concept creep’ and the prevalence of mental health information. Applying this model to the findings of this thesis may suggest that over time there has been a reduction in clear identifiable symptoms of anxiety, possibly due online anxiety discourses sharing personal anecdotal experiences, as well as an oversimplification and increase in terms used to describe anxiety (Haslam et al., 2020). Therefore, as the concept of anxiety expanded to include more symptoms and experiences, such as through mechanisms of online information sharing, everyday normal experiences have begun to fit into the broad generalised concept of anxiety disorders, causing a ‘vertical creep’. This shift means that distinctions in our language between normal and clinical presentations may have become blurred (Haslam and Tse, 2024).

The development of broad a conceptualisation of anxiety could have implications. Research by Hasan et al (2023) found that when social media users see a post normalising anxiety, they are at a greater risk of then believing that they also have an anxiety disorder. Another important consideration is the expansion of more anxiety concepts through “horizontal creep” (Haslam et al., 2020). Recently a new social anxiety measure has been developed called the Social Anxiety Scale for Social Media Users (SAS-SMU), created to capture the construct of social anxiety within online contexts (Alkis et al., 2017), possibly suggesting the development of more anxiety-based concepts.

The findings from this thesis, therefore, challenge more positivist ideals of their being a ‘real’ anxiety that can be easily captured through empirical testing (Park et al., 2020), and instead align more with a social constructionist view accounting for the influences of social practices and discourse in the construction of anxiety. Overall, the combined results of

the papers highlight the importance of language in how we define anxiety, as this will have implications on wider societal understanding and influence how these concepts are measured.

Strengths and Limitations

Systematic Review

This is the first systematic review to assess a social anxiety measure using the COSMIN guidelines, therefore, filling an important gap in the literature. Adherence to the COSMIN guidelines was a great strength of this review as it provides a robust standardised framework, ensuring the evaluation of the Mini-SPIN against high quality pre-determined criteria.

The adaptation of the validated search filters for the use of EBSCO, which to our knowledge has not been done before, contributes further to methods for enhancing searching for psychometrics. Additionally, the use of validated search filters aids in the robustness of this review through increasing search sensitivity, which is particularly important due to the poor tagging of psychometric papers (Terwee et al., 2009). This study can be praised for following recommended best practice of using two independent raters (Mokkink et al., 2024) as well inclusion of rationales and decisions in supporting material. Including all decisions and prospectively registering on PROSPERO will aid in the transparency of this research (Schiavo, 2019).

However, as with the use of any predetermined standards, there was an element of researcher subjectivity in the interpretation and application of COSMIN set standards, which may mean that the findings are inevitably influenced by some degree of bias. For example, whether a measure passes on the psychometric criterion for hypothesis testing or responsiveness is dependent on whether results meet the review team's pre-defined standards. Therefore, despite the high bar and rigidity outlined by COSMIN, there was also a large portion of the evaluative process which required author judgment; hence the degree of subjectivity may be considered a limitation of this study. Another limiting factor in this

review was the lack of COSMIN guidance on the evaluation of abbreviated measures, as this had implications on our recommendations and overall conclusions of the measure.

Limitations were also noted for many of the included studies which had implications on our ability to synthesis the findings. These limitations included: poor reporting of results and administering the full-scale SPIN and then deriving scores for the Mini-SPIN from it.

Empirical project

The following critical appraisal of the empirical project is guided by the Critical Appraisal Skills Programme (CASP). A key strength of this paper was the consideration and alignment of methodological/ analytical approach with the research questions and main author's epistemological position. Additionally, the use of Patient and Public Involvement (PPI) in the formative stages of the research can be considered a strength of this research, as it allowed for a more relevant and appropriate data collection strategy to be composed. Moreover, the author's rigorous consideration of ethics and decision to not include images or direct quotations in the results meant a greater protection of app users.

Another strength of the empirical project was the author's active engagement in the process of reflexivity. This study recognised the importance of socially creating meaning through language and discourse, therefore, it was important to consider the co-construction between the author's own experiences and the data. Reflexivity was especially important during the process of paraphrasing, as such the authors continuously reflected on their own interpretations and use of language, frequently returning to the original quote to ensure the initial meaning had been captured. This reflexive process can be seen as a resource to the research as it can help improve transparency and trustworthiness (Dodgson, 2019).

Furthermore, as recommended in other qualitative research approaches (Braun & Clarke, 2023), the main author of the empirical project also undertook all the transcribing and coding before discussion with research team to allow for further familiarisation. Additionally,

the ability to analysis multimodal data allowed for triangulation of data sources which helps improve rigor (Yardley, 2000; Johnson et al., 2020).

However, the empirical study could be improved with member checking or greater use of PPI throughout for increased rigor (Lincoln & Guba, 1985). A potential limiting factor was the absence of TikTok members' involvement in data analysis (such as resonance or member checking), which would have provided a chance to share our interpretations (McKim, 2023). Additionally, the application of a social constructionist view and having no contact with TikTok users meant that we had a reduced understanding of context, which may be why we felt the need to impose existing theories to the data to help make sense and provide a critical evaluation. Therefore, application of reflexive participant collaboration, a critical member checking strategy, may have aided in the credibility and rigorousness of our study (Motulsky, 2021). Moreover, although applying a critical Marxist perspective provided a useful overview, it should be interpreted as just one way of making sense of the data and that other constructions may also fit.

Another limitation was the inclusion of a very small number of comments. Although comments provided some insight into the user engagement and interactions it was hard to generate meaningful outcomes with such a small corpus. Comments on TikTok are limited to 150 characters meaning that many of the comments where often only a couple of words. We also found that users were sometimes commenting unrelated things, which made it harder to find meaningful themes in the data.

Additionally, this study is also limited by the difficulty in reaching concise clear findings. The findings in the study were presented as four sets of themes which authors found hard to then summarise together, this was likely due to the disjointed nature of the data and the complexity of interactions on TikTok, which has possibly not been fully captured through this method. For example, the levels of interaction, from stiches, to commenting on

comments and sharing videos meant that often there was not a coherent narrative, and we were not able to fully capture all relevant data/ context. Research methods are possibly falling behind the vast technologisation and expansion of apps meaning that more subliminal and complex features are being missed.

Moreover, in qualitative research the use of direct evidence from data can help to support the trustworthiness of the results (Yardley, 2000; Lincoln & Guba, 1985). Therefore, the inclusion of pictures may have supported in the illustration of themes and provided a clearer presentation of the findings. However, we felt that this was not the most ethically responsible thing to do as it could risk users being re-identified (BPS, 2021b). Instead, we chose to adhere to guidelines (BPS, 2021b; BPS, 2021a) and protect users' confidentiality by not including images or direct quotes, however, this may also limit the trustworthiness of the findings.

Consideration of Alternative Methodologies

Systematic review

The systematic review was reported using a narrative synthesis of findings; however, a meta-synthesis was also considered and has been used in previous research when assessing psychometrics (Hale et al., 2011). However, we felt that it would not be appropriate in this case due to the lack of content validity, meaning all other psychometric properties needed to be interpreted with caution (Mokkink et al., 2024). Therefore, applying a meta-analysis may have led to results being mis-interpreted. With evidence of content validity and uni-dimensionality, future research may wish to apply a meta-analysis to the data extracted as this could offer a greater summarised understanding of the quantitative data.

Moreover, other frameworks to COSMIN were considered, such as Terwee et al's (2007) criteria. However, COSMIN was selected as it provides the most updated and comprehensive evaluation, covering all nine psychometric properties and allowing for both traditional

classical test theory and item response theory to be considered when evaluating (Yoon et al., 2021).

Empirical Project

Alternative methods were also considered for use within the empirical study, such as polytextual thematic analysis (Gleeson, 2011, 2012, 2020). Although this alternative methodology could be applicable and would allow for analysis of both video and text-based data, a MMCDAs was selected due its ability to offer a critical analysis of the discourse, which was better placed to answer our pre-determined research questions. Additionally, we felt that a polytextual methodology wouldn't allow for as in-depth qualitative exploration into the individual features offered by the app, meaning it would likely miss out on the understanding of individual semiotic recourses. Additionally, as this study didn't have extensive text-based data it may have practically been harder to apply a polytextual thematic analysis (Trombeta & Cox, 2022).

Implications and Future Research

Systematic Review

The findings from the systematic review have significant clinical implications for the use and application of the Mini-SPIN. We did not find that the Mini-SPIN met COSMIN standards, therefore, we caution clinicians and researchers against the use of the Mini-SPIN until further research has been conducted. As such, future research should endeavour to further investigate the concepts and internal structure of the Mini-SPIN, using COSMIN compliant statistical methods and methodologically sound studies. Moreover, future research on psychometrics more generally may wish to follow the COSMIN framework when conducting individual studies, as this will aid in the production of more high-quality psychometric evidence. Future research should be active in improving standards of reporting and tagging of papers to improve research into psychometrics. A broad hope is that this

review will encourage future researchers to synthesis the evidence of other social anxiety measures, which are still yet to be evaluated against the COSMIN standards.

As highlighted in the findings and limitations of this review, there is variability in the terms used to report psychometrics and subjectivity within the application of the COSMIN framework. As addressed throughout this portfolio, positivist approaches rely on the ability to measure an objective anxiety. However, whilst there is still a degree of subjectivity in the standardised frameworks such as COSMIN and ambiguity in the language to describe psychometric properties, measures will always be affected by variability hence challenging the positivist ideals. Therefore, future research should endeavour to apply consistent terms to describe psychometric properties, and COSMIN standards could be refined to provide more structured guidance or methods which rely less on reviewers' own judgments.

Moreover, as found in the review future research should consider in more detail the way that abbreviated PROMS are developed to ensure they can be fairly compared against high quality criteria. More broadly, future researchers may wish to consider the ways in which we develop PROMS and consider whether a positivist paradigm is the best way to measure the construct. Currently, it is common practice to use concept elicitation to develop new measures, which involves professionals and patients' subjective assessment and reflections on whether they believe the items of the measure reflect the construct of interest (Husbands et al., 2020; Welch et al., 2017). Therefore, PROM development may be subject to variability and subjectivity. The findings from the systematic review do not offer a proposed alternative or necessarily a critique of concept elicitation but rather seek to encourage clinicians to consider how the social and political contexts at the time of the concept elicitation may impact on the construct they end up capturing.

Empirical Project

The empirical project uncovered some of the ways in which anxiety disorders are being represented multi-modally through discourse. However, further research may seek to conduct research with active participation from TikTok users, as this may further our understanding of the social processes between TikTok user's and the app. Moreover, through active participation of TikTok users future research can draw on member checking throughout analysis as well as help to redistribute power to the TikTok users (Motulsky, 2021).

As mentioned in the introductory chapter Foulkes and Andrew (2023) developed their prevalence inflation hypothesis, which suggests that online discourse is contributing to the rise in mental health through awareness and overinterpretation. The empirical research found that TikTok users often commented about self-identifying with the anxiety videos, therefore, it would be interesting to link these finding in with Foulkes and Andrew's (2023) proposed idea. Future research may wish to explore how individuals are describing their mental health in real life through interviews and if this aligns with what we found to be depicted on TikTok.

The empirical paper also identified how there can be variability in the experience of anxiety and how language is often an important vehicle for communicating these experiences. Therefore, clinicians should be afforded more spaces to engage in reflexive processes and should be encouraged to foster a greater awareness to their use of language. The findings from this project may be used to inform clinical thinking about the language we use to construct clients' meaning and distress when formulating (Johnstone & Dallos, 2013). Moreover, the findings from the empirical paper may encourage services to want to helpfully engage in online spaces providing accurate and informative content and sign posting to appropriate professional support.

The findings from this review provide insight into how we are consumers of online content, which is often being marketed to us through multimodal strategies. The empirical

research found trending themes and discourses on TikTok; these findings beg the question has anxiety become trendy? Future research may wish to further explore this shift in mental health from a stigmatised phenomenon to a sensationalised trend and what the benefits of re-marketing it this way might have for society (Stentiford et al., 2023).

Author reflections

Throughout this process I become aware of my dual role as a researcher and a clinician. A position that affords me both privilege and power, but also a duality that is not always cohesive and at times created conflict and tensions. As a researcher, I tend to follow a more social constructionist stance being more critical in my approach, but as a clinician often working closely with people in distress my stance can shift towards a more critical realist position. This epistemological shift pulls me to want to find appropriate tools to measure psychological phenomena and although as a clinician I am still considerate of wider social factors, I find comfort and benefit from being able to view mental health as something that is measurable and treatable. Exploring anxiety through both a social constructionist lens and a positivist approach meant that there was often conflict between my epistemological positions throughout this portfolio. This thesis allowed me to explore both positions, be challenged in my thinking and has supplied me with a rich multidimensional understanding of anxiety disorders.

Overall, the composition of this portfolio has fostered a greater emphasis on the importance of contextualising distress, has orientated me more towards community psychology and has provided me with deep interest in the role of power, which I have started to apply in my clinical work through the use of the power threat meaning framework (Johnstone & Boyle, 2018). Interestingly, this research has not completely moved me away from standard formal practice and diagnosis. In fact, the process of applying two deviating

philosophical positions has providing me with rich learning about the importance of integrating approaches.

Systematic Review

Prior to the review protocol being finalised, I consulted with experts in the field to obtain a better understanding of all the different social anxiety measures. There is merit in assessing all social anxiety measures, however, due to the large amount this was outside of the scope of a single systematic review. Following this I attempted to identify a way of refining the measures down to be feasible for one systematic review. However, in doing so I uncovered the large amount of heterogeneity between the measures. Therefore, to narrow the research I decided to focus on just one social anxiety measure, eventually landing on the Mini-SPIN. The Mini-SPIN was of interest to me due to it only containing three items, making it to my knowledge the shortest assessment tool for social anxiety. As a researcher I wondered whether three items were enough to accurately identify social anxiety and whether it can be considered a reliable and valid measure.

Throughout the process of the systematic review, my learning exceeded my expectations. Despite an initial uncomfortable period, I was forced to immerse myself more in the literature and evolve my understanding of test theory and statistical methods. COSMIN although an impressive framework, I found was limited by its assumption that users have a pre-determined level of comprehension prior to its application, which can feel incredibly daunting for new users. However, throughout the process I came to understand the COSMIN guidelines to be just that, guidance. The skill and knowledge from COSMIN provided the foundation to which I was then able to appropriately adapt and suit the framework to the Mini-SPIN, whilst still adhering to pre-set criteria. Supervisory permission to deviate and adapt to account for the unique experiences in my review helped to be able to apply the framework in a more realistic manner.

Empirical project

My background and prior clinical experience working within youth teams was the initial driving factor behind this project. However, I had very limited experience of qualitative research, therefore, this part of the thesis posed the greatest challenge for me. However, despite the initial steep learning curve, I feel incredibly fortunate to have had the time and support to explore psychological concepts through a qualitative lens.

I found the analysis phase of this project particularly challenging, as it was initially hard to qualitatively assess data through a constructionist lens without my own political beliefs taking over. Reflexivity helped with this greatly, allowing me to identify times in which I may have moved to far away from the data. Throughout the process, I have been aware of imposing my own interpretations on the data, to manage this supervision has been useful to help unpick themes and offer alternatives. Additionally, during the theme development, I regularly returned to the data to ensure cohesion and provided paraphrased quotes or descriptions of the content to support my interpretations.

Throughout the research process I contended with feelings of frustrations towards the expert creators and their portrayal of anxiety which appeared somewhat limited and reductionist. This research experience has fostered reflections on my own practice and wider recognition of the privilege I will hold as a qualified Clinical Psychologist who will often be positioned and expected to hold “expertise”. Therefore, I will be more considerate of the language I use to understand and formulate people’s distress. I will be more conscious of how I share my knowledge and my role in the process of co-constructing formulations with service users.

Overall Conclusion

This thesis portfolio evaluated the psychometric properties of the Mini-SPIN to determine if it is a psychometrically robust measure for social anxiety, and to explore the

digital conceptualisations of anxiety through multimodal discursive practices on TikTok. The findings from both papers should be considered within the context of their individual methodological strengths and limitations and so care has been actioned when drawing conclusions. The Mini-SPIN did not meet COSMIN standards at this time, therefore, is not currently considered a psychometrically robust assessment for social anxiety. In response the empirical paper sought to explore the digital conceptualisations of anxiety disorders and found that discourses tended to commodify anxiety and favour more neoliberal ideologies, in which positions individuals as responsible for their own distress. This ideological positioning was constructed through an absence of systemic factors in discourse, medicalised underpinnings, promotion of self-help and self-promotion as well as an encouragement for users to identify. Overall, findings from this thesis highlight the complexity in conceptualising and measuring psychological phenomenon such as anxiety, encouraging clinicians and researchers to be critical in their approaches and consider the wider social, cultural context. I am leaving this process with a greater critical awareness and belief that diversity in our thinking is the most compassionate way to view the complex world that we live in.

References

- Abma, I. L., Rovers, M., & van der Wees, P. J. (2016). Appraising convergent validity of patient-reported outcome measures in systematic reviews: constructing hypotheses and interpreting outcomes. *BMC research notes*, 9(226), 1-5.
<https://doi.org/10.1186/s13104-016-2034-2>
- Aderka, I. M., Pollack, M. H., Simon, N. M., Smits, J. A., Van Ameringen, M., Stein, M. B., & Hofmann, S. G. (2013). Development of a brief version of the social phobia inventory using item response theory: the mini-SPIN-R. *Behavior therapy*, 44(4), 651-661. <https://doi.org/10.1016/j.beth.2013.04.011>
- Albert, C. S., & Salam, A. F. (2013, August). Critical discourse analysis: Toward theories in social media. In: *Proceedings of the nineteenth Americas conference on information systems*, Chicago, IL, 15-17.
- Alkis, Y., Kadirhan, Z., & Sat, M. (2017). Development and validation of social anxiety scale for social media users. *Computers in Human Behavior*, 72, 296-303.
<https://doi.org/10.1016/j.chb.2017.03.011>
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd edition). American Psychiatric Publishing.
- American Psychiatric Association. (2015). *Anxiety disorders: DSM-5® selections*. American Psychiatric Publishing.
- American Psychiatric Association.(2022). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., text rev). [doi: 10.1176/appi.books.9780890425787](https://doi.org/10.1176/appi.books.9780890425787).
- Antony, M. M., Coons, M. J., McCabe, R. E., Ashbaugh, A., & Swinson, R. P. (2006). Psychometric properties of the social phobia inventory: Further evaluation. *Behaviour research and therapy*, 44(8), 1177-1185.
<https://doi.org/10.1016/j.brat.2005.08.013>

- Anunciacao, L. (2018). An overview of the history and methodological aspects of psychometrics: History and methodological aspects of psychometrics. *Journal for ReAttach Therapy and Developmental Diversities*, 1(1), 44-58.
<https://doi.org/10.26407/2018jrtd.1.6>
- Balcioğlu, Y., S. (2024). Anxiety management strategies on TikTok: a discourse analysis of collective coping mechanisms. *Journal of Mental Health* 33(5), 619-629.
[doi:10.1080/09638237.2024.2390365](https://doi.org/10.1080/09638237.2024.2390365)
- Baldry, A., & Thibault, P. J. (2006). *Multimodal transcription and text analysis: A multimedia toolkit and coursebook*. University of Toronto Press.
- Bandelow, B., Michaelis, S., & Wedekind, D. (2017). Treatment of anxiety disorders. *Dialogues in clinical neuroscience*, 19(2), 93-107.
<https://doi.org/10.31887/DCNS.2017.19.2/bbandelow>
- Bandelow, B., Reitt, M., Röver, C., Michaelis, S., Görlich, Y., & Wedekind, D. (2015). Efficacy of treatments for anxiety disorders: a meta-analysis. *International clinical psychopharmacology*, 30(4), 183-192.
<https://doi.org/10.1097/YIC.0000000000000078>
- Bandelow, B., Sagebiel, A., Belz, M., Görlich, Y., Michaelis, S., & Wedekind, D. (2018). Enduring effects of psychological treatments for anxiety disorders: meta-analysis of follow-up studies. *The British Journal of Psychiatry*, 212(6), 333-338.
<https://doi.org/10.1192/bjp.2018.49>
- Barrera, T. L., & Norton, P. J. (2009). Quality of life impairment in generalized anxiety disorder, social phobia, and panic disorder. *Journal of anxiety disorders*, 23(8), 1086-1090. <https://doi.org/10.1016/j.janxdis.2009.07.011>

- Basch, C. H., Donelle, L., Fera, J., & Jaime, C. (2022). Deconstructing TikTok videos on mental health: cross-sectional, descriptive content analysis. *JMIR formative research*, 6(5), e38340. <https://doi.org/10.2196/38340>
- Batterham, P. J., Mackinnon, A. J., & Christensen, H. (2017). Community-based validation of the Social Phobia Screener (SOPHS). *Assessment*, 24(7), 958-969. <https://doi.org/10.1177/1073191116636448>
- Beard, G. (1869). Neurasthenia, or nervous exhaustion. *The Boston Medical and Surgical Journal*, 80(13), 217-221. <https://doi.org/10.1056/NEJM186904290801301>
- Beck, A. T., Emery, G., & Greenberg, R. L. (1985). *Anxiety disorders and phobias: A cognitive perspective*. Basic Books.
- Behar, E., DiMarco, I. D., Hekler, E. B., Mohlman, J., & Staples, A. M. (2009). Current theoretical models of generalized anxiety disorder (GAD): Conceptual review and treatment implications. *Journal of anxiety disorders*, 23(8), 1011-1023. <https://doi.org/10.1016/j.janxdis.2009.07.006>
- Beidel, D. C., & Randall, J. (1994). Social phobia. In Ollendick, T. H., King, N. J., & Yule, W. (Eds.), *International handbook of phobic and anxiety disorders in children and adolescents* (pp. 111-129). Springer US. https://doi.org/10.1007/978-1-4899-1498-9_6
- Beidel, D. C., Turner, S. M., & Morris, T. L. (1995). A new inventory to assess childhood social anxiety and phobia: The Social Phobia and Anxiety Inventory for Children. *Psychological assessment*, 7(1), 73-79. <https://doi.org/10.1037/1040-3590.7.1.73>
- Ben-Ari, A., & Enosh, G. (2011). Processes of reflectivity: Knowledge construction in qualitative research. *Qualitative Social Work*, 10(2), 152-171. <https://doi.org/10.1177/1473325010369024>

- Berry, N., Lobban, F., Belousov, M., Emsley, R., Nenadic, G., & Bucci, S. (2017). #WhyWeTweetMH: understanding why people use Twitter to discuss mental health problems. *Journal of medical Internet research*, 19(4), 1-13.
<https://doi.org/10.2196/jmir.6173>
- Blair, J., & Abdullah, S. (2018, May). Supporting constructive mental health discourse in social media. In *Proceedings of the 12th EAI International Conference on Pervasive Computing Technologies for Healthcare* (pp. 299-303).
- Borkovec, T. D., Shadick, R. N., & Hopkins, M. (1991). The nature of normal and pathological worry. In Rapee R. M., & D. H. Barlow (Eds.), *Chronic anxiety: Generalized anxiety disorder and mixed anxiety-depression* (pp. 29-51). The Guilford Press.
- Bouvier, G. (2022). From ‘echo chambers’ to ‘chaos chambers’: Discursive coherence and contradiction in the# MeToo Twitter feed. *Critical Discourse Studies*, 19(2), 179-195.
<https://doi.org/10.1080/17405904.2020.1822898>
- Bouvier, G., & Machin, D. (2020). Critical discourse analysis and the challenges and opportunities of social media. In Guillem, S. M., & Toula, C. (2020) (Eds.), *Critical discourse studies and/in communication* (pp. 39-53). Routledge.
- Bowers, M. E., Reider, L. B., Morales, S., Buzzell, G. A., Miller, N., Troller-Renfree, S. V., ... & Fox, N. A. (2020). Differences in parent and child report on the screen for child anxiety-related emotional disorders (SCARED): Implications for investigations of social anxiety in adolescents. *Journal of abnormal child psychology*, 48(1), 561-571.
<https://doi.org/10.1007/s10802-019-00609-3>
- Braun, V., & Clarke, V. (2023). Toward good practice in thematic analysis: Avoiding common problems and becoming a knowing researcher. *International journal of transgender health*, 24(1), 1-6. <https://doi.org/10.1080/26895269.2022.2129597>

- Breeze, R. (2011). Critical discourse analysis and its critics. *Pragmatics. quarterly publication of the international pragmatics association*, 21(4), 493-525.
<https://doi.org/10.1075/prag.21.4.01bre>
- British Psychological Society. (2021a). *Code of Human Research Ethics*.
<https://doi.org/10.53841/bpsrep.2021.inf180>
- British Psychological Society. (2021b). *Ethical Guidelines for Internet Mediated Research*.
<https://doi.org/10.53841/bpsrep.2021.rep155>
- Brown, T. A., & Barlow, D. H. (2014). *Anxiety and related disorders interview schedule for DSM-5 (ADIS-5)-adult and lifetime version: Clinician manual*. Oxford University Press.
- Burnham, J. (2018). Developments in Social GRRRAAACCEEESSS: visible–invisible and voiced–unvoiced 1. In Krause, I. B. (2018), *Culture and reflexivity in systemic psychotherapy* (pp. 139-160). Routledge.
- Burr, V. (2015). *Social constructionism* (3rd ed.). Routledge.
<https://doi.org/10.4324/9781315715421>
- Burr, V., & Dick, P. (2017). Social constructionism. In B. Gough (Ed.), *The Palgrave handbook of critical social psychology* (pp. 59-80). Macmillan Publishers Ltd.
<https://doi.org/10.1057/978-1-137-51018-1>
- Caballo, V. E., Salazar, I. C., Iurtia, M. J., Arias, B., Hofmann, S. G., & ciso-a Research Team. (2012). The multidimensional nature and multicultural validity of a new measure of social anxiety: The Social Anxiety Questionnaire for Adults. *Behavior therapy*, 43(2), 313-328. <https://doi.org/10.1016/j.beth.2011.07.001>
- Cacioppo, J. T., Semin, G. R., & Berntson, G. G. (2004). Realism, Instrumentalism, and Scientific Symbiosis: Psychological Theory as a search for truth and the discovery of

- solutions. *American Psychologist*, 59(4), 214-233. <https://doi.org/10.1037/0003-066X.59.4.214>
- Carleton, R. N., Collimore, K. C., Asmundson, G. J., McCabe, R. E., Rowa, K., & Antony, M. M. (2010). SPINning factors: Factor analytic evaluation of the Social Phobia Inventory in clinical and nonclinical undergraduate samples. *Journal of Anxiety Disorders*, 24(1), 94-101. <https://doi.org/10.1016/j.janxdis.2009.09.003>
- Carlson, E. B., Smith, S. R., Palmieri, P. A., Dalenberg, C., Ruzek, J. I., Kimerling, R., ... & Spain, D. A. (2011). Development and validation of a brief self-report measure of trauma exposure: the Trauma History Screen. *Psychological assessment*, 23(2), 463-477. <https://doi.org/10.1037/a0022294>.
- Carter, N. (2014). The use of triangulation in qualitative research. *Oncology Nursing Forum* 41(5), 545-547. <https://doi.org/10.1188/14.ONF.545-547>
- Chartier, M. J., Walker, J. R., & Stein, M. B. (2003). Considering comorbidity in social phobia. *Social psychiatry and psychiatric epidemiology*, 38, 728-734. <https://doi.org/10.1007/s00127-003-0720-6>
- Cisney, V. W., & Morar, N. (Eds.). (2020). *Biopower: Foucault and beyond*. University of Chicago Press. <https://doi.org/10.7208/9780226226767>
- Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R.G. Heimberg, M.R. Liebowitz, D.A. Hope, & F.R. Schneier (Eds.), *Social phobia: Diagnosis, assessment, and treatment* (pp. 69-93). Guilford Press.
- Cohen, B. (2017). *Routledge International Handbook of Critical Mental Health*. Routledge
- Cohen, B. M. (2016). *Psychiatric hegemony: A Marxist theory of mental illness*. Palgrave Macmillan Publishers Ltd. <https://doi.org/10.1057/978-1-137-46051-6>.
- Coltman, T., Devinney, T. M., Midgley, D. F., & Venaik, S. (2008). Formative versus reflective measurement models: Two applications of formative measurement. *Journal*

of Business research, 61(12), 1250-1262.

<https://doi.org/10.1016/j.jbusres.2008.01.013>

Connor, K. M., Davidson, J. R., Churchill, L. E., Sherwood, A., Weisler, R. H., & Foa, E.

(2000). Psychometric properties of the Social Phobia Inventory (SPIN): New self-rating scale. *The British Journal of Psychiatry*, 176(4), 379-

386. <https://doi.org/10.1192/bjp.176.4.379>

Connor, K. M., Kobak, K. A., Churchill, L. E., Katzelnick, D., & Davidson, J. R. (2001).

Mini-SPIN: A brief screening assessment for generalized social anxiety

disorder. *Depression and anxiety*, 14(2), 137-140. <https://doi.org/10.1002/da.1055>

Constas, M. A. (1992). Qualitative analysis as a public event: The documentation of category development procedures. *American educational research journal*, 29(2), 253-266.

<http://doi.org/10.3102/00028312029002253>

Copyright, Designs and Patents Act 1988, c.48 (UK).

<https://www.legislation.gov.uk/ukpga/1988/48/contents>

Corzine, A., & Roy, A. (2024). Inside the black mirror: current perspectives on the role of social media in mental illness self-diagnosis. *Discover Psychology*, 4(40), 1-9.

<https://doi.org/10.1007/s44202-024-00152-3>

Craske, M. G., Rauch, S. L., Ursano, R., Prenoveau, J., Pine, D. S., & Zinbarg, R. E. (2011).

What is an anxiety disorder?. *Focus*, 9(3), 369-388.

<https://doi.org/10.1176/foc.9.3.foc369>

Credé, M., Harms, P., Niehorster, S., & Gaye-Valentine, A. (2012). An evaluation of the

consequences of using short measures of the Big Five personality traits. *Journal of personality and social psychology*, 102(4), 874-888. <https://doi.org/10.1037/a0027403>

Crocq, M. A. (2015). A history of anxiety: from Hippocrates to DSM. *Dialogues in clinical*

neuroscience, 17(3), 319-325. <https://doi.org/10.31887/DCNS.2015.17.3/macrocq>

- Crocq, M.A. (2017). The history of generalized anxiety disorder as a diagnostic category. *Dialogues in clinical neuroscience*, 19(2), 107-116.
<https://doi.org/10.31887/DCNS.2017.19.2/macrocq>
- Cuijpers, P., Cristea, I. A., Karyotaki, E., Reijnders, M., & Huibers, M. J. (2016). How effective are cognitive behavior therapies for major depression and anxiety disorders? A meta-analytic update of the evidence. *World psychiatry*, 15(3), 245-258.
<https://doi.org/10.1002/wps.20346>
- Curtin, M., & Fossey, E. (2007). Appraising the trustworthiness of qualitative studies: Guidelines for occupational therapists. *Australian occupational therapy journal*, 54(2), 88-94. <https://doi.org/10.1111/j.1440-1630.2007.00661.x>
- Dahl, A. A., & Dahl, C. F. (2010). Are there gender differences in impairment associated with high social anxiety? A community-based study. *Journal of anxiety disorders*, 24(5), 487-493. <https://doi.org/10.1016/j.janxdis.2010.03.005>
- Dahl, A. A., & Olsson, I. (2013). Unfavorable health conditions associated with high social anxiety in the elderly: a community-based study. *Nordic journal of psychiatry*, 67(1), 30-37. <https://doi.org/10.3109/08039488.2012.668935>
- Danielsson, K., & Selander, S. (2021). Semiotic modes and representations of knowledge. In K. Danielsson & S. Selander (Eds.), *Multimodal texts in disciplinary education: A comprehensive framework* (pp. 17-23). Springer Nature. <https://doi.org/10.1007/978-3-030-63960-0>.
- Davidson, M. M., Butchko, M. S., Robbins, K., Sherd, L. W., & Gervais, S. J. (2016). The mediating role of perceived safety on street harassment and anxiety. *Psychology of Violence*, 6(4), 553. <https://doi.org/10.1037/a0039970>.
- De Lijster, J. M., Dierckx, B., Utens, E. M., Verhulst, F. C., Zieldorff, C., Dieleman, G. C., & Legerstee, J. S. (2017). The age of onset of anxiety disorders: a meta-

analysis. *Canadian journal of psychiatry*, 62(4), 237-246.

<https://doi.org/10.1177/0706743716640757>

de Lima Osório, F., Crippa, J. A., & Loureiro, S. R. (2007). A study of the discriminative validity of a screening tool (MINI-SPIN) for social anxiety disorder applied to Brazilian university students. *European Psychiatry*, 22(4), 239-243.

<https://doi.org/10.1016/j.eurpsy.2007.01.003>

DeMars, C. (2010). "Introduction", *Item response theory / Christine DeMars*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195377033.003.0001>

DeVellis, R. F. (2006). Classical test theory. *Medical care*, 44(11), 50-59.

<https://doi.org/10.1097/01.mlr.0000245426.10853.30>

Devlin, N. J., & Appleby, J. (2010). *Getting the most out of PROMs: Putting health outcomes at the heart of NHS decision-making*. The King's Fund.

Dobson, K. S., Poole, J. C., & Beck, J. S. (2018). The fundamental cognitive model. In R. L. Leahy (Eds.), *Science and practice in cognitive therapy: Foundations, mechanisms, and applications*, (pp. 29-47). Guilford Publications.

Dodgson, J. E. (2019). Reflexivity in qualitative research. *Journal of human lactation*, 35(2), 220-222. <https://doi.org/10.1177/0890334419830990>

Donkoh, S., & Mensah, J. (2023). Application of triangulation in qualitative research. *Journal of Applied Biotechnology and Bioengineering*, 10(1), 6-9.

<https://doi.org/10.15406/jabb.2023.10.00319>

Drioli-Phillips, P. G., Oxlad, M., Feo, R., Scholz, B., & LeCouteur, A. (2020). "I feel abused by my own mind": Themes of control in men's online accounts of living with anxiety. *Qualitative Health Research*, 30(13), 2118-2131.

<https://doi.org/10.1177/1049732320942147>.

- Drioli-Phillips, P. G., Oxlad, M., LeCouteur, A., Feo, R., & Scholz, B. (2021). Men's talk about anxiety online: Constructing an authentically anxious identity allows help-seeking. *Psychology of Men & Masculinities*, 22(1), 77-87.
- Dugas, M. J., Gagnon, F., Ladouceur, R., & Freeston, M. H. (1998). Generalized anxiety disorder: A preliminary test of a conceptual model. *Behaviour Research and Therapy*, 36(2), 215-226. [https://doi.org/10.1016/S0005-7967\(97\)00070-3](https://doi.org/10.1016/S0005-7967(97)00070-3)
- El-Den, S., Schneider, C., Mirzaei, A., & Carter, S. (2020). How to measure a latent construct: psychometric principles for the development and validation of measurement instruments. *International Journal of Pharmacy Practice*, 28(4), 326-336. <https://doi.org/10.1111/ijpp.12600>
- Eldh, A. C., Årestedt, L., & Berterö, C. (2020). Quotations in qualitative studies: Reflections on constituents, custom, and purpose. *International Journal of Qualitative Methods*, 19, 1-6. <https://doi.org/10.1177/160940692096926>
- Elsman, E. B. M., Mokkink, L. B., Terwee, C. B., Beaton, D., Gagnier, J. J., Tricco, A. C., Baba, A., Butcher, N. J., Smith, M., Hofstetter, C., Lee Aiyegbusi, O., Berardi, A., Farmer, J., Haywood, K. L., Krause, K. R., Markham, S., Mayo-Wilson, E., Mehdipour, A., Ricketts, J., Szatmari, P., ... Offringa, M. (2024). Guideline for reporting systematic reviews of outcome measurement instruments (OMIs): PRISMA-COSMIN for OMIs 2024. *Journal of clinical epidemiology*, 173, 111422. <https://doi.org/10.1016/j.jclinepi.2024.111422>
- Elsman, E. B., Mokkink, L. B., Langendoen-Gort, M., Rutters, F., Beulens, J., Elders, P. J., & Terwee, C. B. (2022). Systematic review on the measurement properties of diabetes-specific patient-reported outcome measures (PROMs) for measuring physical functioning in people with type 2 diabetes. *BMJ Open Diabetes Research and Care*, 10(3), e002729.

- Engel, E., Gell, S., Heiss, R., & Karsay, K. (2024). Social media influencers and adolescents' health: A scoping review of the research field. *Social science & medicine*, 340, 116387. <https://doi.org/10.1016/j.socscimed.2023.116387>
- Esposito, L., & Perez, F. M. (2014). Neoliberalism and the commodification of mental health. *Humanity & society*, 38(4), 414-442. <https://doi.org/10.1177/0160597614544958>
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272-299.
- Fairclough, N. (1992). Discourse and text: Linguistic and intertextual analysis within discourse analysis. *Discourse & society*, 3(2), 193-217. <https://doi.org/10.1177/0957926592003002004>
- Fairclough, N. (2010). *Critical Discourse Analysis* (2nd ed.). Routledge.
- Fairclough, N. (2013). Critical discourse analysis. In Handford, M., & Gee, J. P. (Eds.). *The Routledge handbook of discourse analysis* (pp. 9-20). Routledge.
- Falk Dahl, C. A., & Dahl, A. A. (2010). Lifestyle and social network in individuals with high level of social phobia/anxiety symptoms: a community-based study. *Social psychiatry and psychiatric epidemiology*, 45, 309-317. <https://doi.org/10.1007/s00127-009-0069-6>
- Fogliati, V. J., Terides, M. D., Gandy, M., Staples, L. G., Johnston, L., Karin, E., ... & Dear, B. F. (2016). Psychometric properties of the mini-social phobia inventory (Mini-SPIN) in a large online treatment-seeking sample. *Cognitive behaviour therapy*, 45(3), 236-257. <https://doi.org/10.1080/16506073.2016.1158206>
- Foucault, M. (1980). *Power/Knowledge*. Pantheon.

- Foulkes, L., & Andrews, J. L. (2023). Are mental health awareness efforts contributing to the rise in reported mental health problems? A call to test the prevalence inflation hypothesis. *New Ideas in Psychology*, 69, 101010.
<https://doi.org/10.1016/j.newideapsych.2023.101010>
- Franceschini, M., Boffa, A., Pignotti, E., Andriolo, L., Zaffagnini, S., & Filardo, G. (2023). The minimal clinically important difference changes greatly based on the different calculation methods. *The American Journal of Sports Medicine*, 51(4), 1067-1073.
<https://doi.org/10.1177/03635465231152484>
- Franzke, A., Bechmann, A., Zimmer, M., Ess, C. & The Association of Internet Researchers (2019). *Internet Research: Ethical Guidelines 3.0*. <https://aoir.org/reports/ethics3.pdf>
- Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, 20(9), 1408-1416.
- Galanis, P., Katsiroumpa, A., Katsiroumpa, Z., Mangoulia, P., Gallos, P., Moisoglou, I., & Koukia, E. (2025). Association between problematic TikTok use and mental health: A systematic review and meta-analysis. *AIMS Public Health*, 12(2), 491-519.
<https://doi.org/10.3934/publichealth.2025027>
- Gallagher, L. (2021). Welcome to AnxietyTok: An empirical review of peer support for individuals living with mental illness on the social networking site TikTok. *Veritas Villanova Review Journal*, 3(1), 24-32.
- Galton, F. (1884). Measurement of character. *Fortnightly Review*, 36(1), 179-182
- García-López, L. J., Olivares, J., Hidalgo, M. D., Beidel, D. C., & Turner, S. M. (2001). Psychometric properties of the social phobia and anxiety inventory, the Social Anxiety Scale for Adolescents, the Fear of Negative Evaluation Scale, and the Social Avoidance and Distress Scale in an adolescent Spanish-speaking sample. *Journal of*

Psychopathology and behavioral assessment, 23, 51-59.

<https://doi.org/10.1023/A:1011043607878>

Garcia-Lopez, L. J., Sáez-Castillo, A. J., Beidel, D., & La Greca, A. M. (2015). Brief measures to screen for social anxiety in adolescents. *Journal of Developmental & Behavioral Pediatrics*, 36(8), 562-568.

<https://doi.org/10.1097/DBP.00000000000000213>

Garcia-Lopez, L., & Moore, H. T. (2015). Validation and diagnostic efficiency of the mini-SPIN in Spanish-speaking adolescents. *PLoS One*, 10(8), e0135862.

<https://doi.org/10.1371/journal.pone.0135862>

Garcia, I., & O'Neil, J. (2021). Anxiety in adolescents. *The Journal for Nurse Practitioners*, 17(1), 49-53. <https://doi.org/10.1016/j.nurpra.2020.08.021>

Gilboa-Schechtman, E., Shachar, I., & Helpman, L. (2014). Evolutionary perspective on social anxiety. In S. G. Hofmann & P. M. DiBartolo (Eds.), *Social anxiety: Clinical, developmental, and social perspectives* (pp. 599-622). Academic Press.

Ginsburg, G. S., La Greca, A. M., & Silverman, W. K. (1998). Social anxiety in children with anxiety disorders: Relation with social and emotional functioning. *Journal of abnormal child psychology*, 26, 175-185. <https://doi.org/10.1023/A:1022668101048>

Gleeson, K. (2011). Polytextual thematic analysis for visual data. In P. Reavey (Ed.), *Visual methods in psychology: Using and interpreting images in qualitative research* (pp. 314- 329). Taylor Francis.

Gleeson, K. (2012). Polytextual thematic analysis for visual data: Pinning down the analytic. In P. Reavey (Ed.), *Visual methods in psychology* (pp. 346-361). Routledge.

Gleeson, K. (2020). Polytextual thematic analysis for visual data: Analysing visual images. In Reavey, P. (Ed.), *A handbook of visual methods in psychology* (pp. 536-554). Routledge.

- Gordon, D., & Heimberg, R. G. (2011). Reliability and validity of DSM-IV generalized anxiety disorder features. *Journal of Anxiety Disorders*, 25(6), 813-821.
<https://doi.org/10.1016/j.janxdis.2011.04.001>
- Granholt, A., Alhazzani, W., & Møller, M. H. (2019). Use of the GRADE approach in systematic reviews and guidelines. *British journal of anaesthesia*, 123(5), 554-559.
<https://doi.org/10.1016/j.bja.2019.08.015>
- Greene, A. M., Bailey, C. R., & Neumeister, A. (2013). A biopsychosocial approach to anxiety. In S. M. Stahl & B. A. Moore (Eds.), *Anxiety disorders: A guide for integrating psychopharmacology and psychotherapy* (pp. 25-50). Routledge.
<https://doi.org/10.4324/9780203124598>
- Grujters, S. L. (2019). Using principal component analysis to validate psychological scales: Bad statistical habits we should have broken yesterday II. *European Health Psychologist*, 20(5), 544-549.
- Guba, E. G. (1981). Criteria for assessing the trustworthiness of naturalistic inquiries. *Educational Communication and Technology Journal*, 29(2), 75-91.
<https://doi.org/10.1007/BF02766777>
- Guyatt, G., Oxman, A. D., Akl, E. A., Kunz, R., Vist, G., Brozek, J., ... & Schünemann, H. J. (2011). GRADE guidelines: 1. Introduction—GRADE evidence profiles and summary of findings tables. *Journal of Clinical Epidemiology*, 64(4), 383-394.
<https://doi.org/10.1016/j.jclinepi.2010.04.026>
- Hagell, P. (2014). Testing rating scale unidimensionality using the principal component analysis (PCA)/t-test protocol with the Rasch model: the primacy of theory over statistics. *Open Journal of Statistics*, 4(6), 456-465.
<https://doi.org/10.4236/ojs.2014.46044>

- Hale, W. W., Crocetti, E., Raaijmakers, Q. A., & Meeus, W. H. (2011). A meta-analysis of the cross-cultural psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED). *Journal of Child Psychology and Psychiatry*, 52(1), 80-90. <https://doi.org/10.1111/j.1469-7610.2010.02285.x>
- Halliday, M. A. K. (1975). Learning how to mean. In *Foundations of language development* (pp. 239-265). Academic Press. <https://doi.org/10.1016/B978-0-12-443701-2.50025-1>
- Halliday, M. A. K. (1978). *Language as social semiotic: The social interpretation of language and meaning*. Arnold
- Hambleton, R. K., & Swaminathan, H. (2013). *Item response theory: Principles and applications*. Springer Science & Business Media.
- Hamilton, J. L., Dreier, M. J., & Boyd, S. (2023). Social media as a bridge and a window: The changing relationship of adolescents with social media and digital platforms. *Current Opinion in Psychology*, 52(1), 1-7. <https://doi.org/10.1016/j.copsyc.2023.101633>
- Harper, D. J. (1995). Discourse analysis and 'mental health'. *Journal of mental health*, 4(4), 347-358. <https://doi.org/10.1080/09638239550037406>
- Harvey, R. J., & Hammer, A. L. (1999). Item response theory. *The Counselling Psychologist*, 27(3), 353-383. <https://doi.org/10.1177/0011000099273004>
- Hasan, F., Foster, M. M., & Cho, H. (2023). Normalizing anxiety on social media increases self-diagnosis of anxiety: The mediating effect of identification (but not stigma). *Journal of health communication*, 28(9), 563-572. <https://doi.org/10.1080/10810730.2023.2235563>
- Haslam, N. (2016). Concept creep: Psychology's expanding concepts of harm and pathology. *Psychological inquiry*, 27(1), 1-17. <https://doi.org/10.1080/1047840X.2016.1082418>

- Haslam, N., & Tse, J. S. (2024). Public awareness of mental illness: Mental health literacy or concept creep?. *Australasian Psychiatry*, 33(1), 18-20.
<https://doi.org/10.1177/10398562241292202>
- Haslam, N., Dakin, B. C., Fabiano, F., McGrath, M. J., Rhee, J., Vylomova, E., ... & Wheeler, M. A. (2020). Harm inflation: Making sense of concept creep. *European Review of Social Psychology*, 31(1), 254-286.
<https://doi.org/10.1080/10463283.2020.1796080>
- Hathway, T., McLellan, L. F., Dear, B. F., Trompeter, N., Carl, T., Wuthrich, V., ... & Rapee, R. M. (2024). The psychometric properties of the Mini Social Phobia Inventory in a treatment seeking sample of children and their caregivers. *Cognitive Behaviour Therapy*, 54(2), 171-189. <https://doi.org/10.1080/16506073.2024.2397673>
- Haynes, K. (2012). Reflexivity in qualitative research. *Qualitative organizational research: Core methods and current challenges*, 26, 72-89.
- Heimberg, R. G., Horner, K. J., Juster, H. R., Safren, S. A., Brown, E. J., Schneier, F. R., & Liebowitz, M. R. (1999). Psychometric properties of the Liebowitz social anxiety scale. *Psychological medicine*, 29(1), 199-212.
<https://doi.org/10.1017/S0033291798007879>
- Heiser, N. A., Turner, S. M., Beidel, D. C., & Roberson-Nay, R. (2009). Differentiating social phobia from shyness. *Journal of anxiety disorders*, 23(4), 469-476.
<https://doi.org/10.1016/j.janxdis.2008.10.002>
- Hettema, J. M., Neale, M. C., & Kendler, K. S. (2001). A review and meta-analysis of the genetic epidemiology of anxiety disorders. *American Journal of Psychiatry*, 158(10), 1568-1578. <https://doi.org/10.1176/appi.ajp.158.10.1568>

- Hinde, S., & Spackman, E. (2015). Bidirectional citation searching to completion: an exploration of literature searching methods. *Pharmacoeconomics*, 33(1), 5-11.
<https://doi.org/10.1007/s40273-014-0205-3>
- Hoch, P. H., & J. Zubin (Eds.)(1950). *Anxiety*. Grune & Stratton.
- Holmes, M. M., Lewith, G., Newell, D., Field, J., & Bishop, F. L. (2017). The impact of patient-reported outcome measures in clinical practice for pain: a systematic review. *Quality of Life Research*, 26(1), 245-257. <https://doi.org/10.1007/s11136-016-1449-5>
- Horwitz, A. V. (2013). *Anxiety: A short history*. JHU Press.
- Husbands, S., Mitchell, P. M., & Coast, J. (2020). A systematic review of the use and quality of qualitative methods in concept elicitation for measures with children and young people. *The Patient-Patient-Centered Outcomes Research*, 13, 257-288.
<https://doi.org/10.1007/s40271-020-00414-x>
- Intellectual Property Office. (2021). *Exceptions to Copyright* [guidance]. GOV.UK.
<https://www.gov.uk/guidance/exceptions-to-copyright#fair-dealing>
- Issaka, B., A. K. Aidoo, S. F. Wood, & F. Mohammed. (2024). “Anxiety is not cute”: Analysis of Twitter users' discourses on romanticizing mental illness. *BMC Psychiatry*, 24(221), 1-16. <https://doi.org/10.1186/s12888-024-05663-w>
- Jadayel, R., K. Medlej, & J. J. Jadayel. (2017). Mental disorders: A glamorous attraction on social media. *Journal of Teaching and Education*, 7(1), 465-476.
- Javaid, S. F., I. J. Hashim, M. J. Hashim, E. Stip, M. A. Samad, & A. A. Ahbabi. (2023). Epidemiology of anxiety disorders: Global burden and sociodemographic associations. *Middle East Current Psychiatry*, 30(44), 1-11.
<https://doi.org/10.1186/s43045-023-00315-3>

- Jesse, S. Y., & Haslam, N. (2024). Broad concepts of mental disorder predict self-diagnosis. *SSM-Mental Health*, 6, 100326.
<https://doi.org/10.1016/j.ssmmh.2024.100326>
- Johnson, B., Quinlan, M. M., & Pope, N. (2019). # ttc on Instagram: A multimodal discourse analysis of the treatment experience of patients pursuing in vitro fertilization. *Qualitative Research in Medicine and Healthcare*, 3(1), 1-12.
<https://doi.org/10.4081/qrmh.2019.7875>
- Johnson, J. L., Adkins, D., & Chauvin, S. (2020). A review of the quality indicators of rigor in qualitative research. *American journal of pharmaceutical education*, 84(1), 138-146. <https://doi.org/10.5688/ajpe7120>
- Johnstone, L., & Boyle, M. (2018). The power threat meaning framework: An alternative nondiagnostic conceptual system. *Journal of Humanistic Psychology*, 0(0).
<https://doi.org/10.1177/00221678187932>
- Johnstone, L., & Dallos, R. (2013). Introduction to formulation. In *Formulation in psychology and psychotherapy*. Routledge.
- Jokic-Begic, N., Lauri Korajlija, A., & Mikac, U. (2020). Cyberchondria in the age of COVID-19. *PloS one*, 15(12), e0243704.
<https://doi.org/10.1371/journal.pone.0243704>
- Jones, L. V., & Thissen, D. (2006). 1 a history and overview of psychometrics. *Handbook of statistics*, 26(1), 1-27. [https://doi.org/10.1016/S0169-7161\(06\)26001-2](https://doi.org/10.1016/S0169-7161(06)26001-2)
- Katzelnick, D. J., & Greist, J. H. (2001). Social anxiety disorder: an unrecognized problem in primary care. *Journal of Clinical Psychiatry*, 62(1), 11-16.
- Kaufman, J., Birmaher, B., Brent, D., Rao, U. M. A., Flynn, C., Moreci, P., ... & Ryan, N. (1997). Schedule for affective disorders and schizophrenia for school-age children-present and lifetime version (K-SADS-PL): initial reliability and validity

- data. *Journal of the American Academy of Child & Adolescent Psychiatry*, 36(7), 980-988. <https://doi.org/10.1097/00004583-199707000-00021>
- Kay, P., & Kempton, W. (1984). What is the Sapir-Whorf hypothesis?. *American anthropologist*, 86(1), 65-79. <https://doi.org/10.1525/aa.1984.86.1.02a00050>
- Keles, B., McCrae, N., & Grealish, A. (2020). A systematic review: the influence of social media on depression, anxiety and psychological distress in adolescents. *International journal of adolescence and youth*, 25(1), 79-93. <https://doi.org/10.1080/02673843.2019.1590851>
- Kendall, T., Cape, J., Chan, M., & Taylor, C. (2011). Management of generalised anxiety disorder in adults: summary of NICE guidance. *British Medical Journal*, 342(7791), 279-781. <https://doi.org/10.1136/bmj.c7460>
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry*, 62(6), 593-602. <https://doi.org/10.1001/archpsyc.62.6.593>
- Khalid-Khan, S., Santibanez, M. P., McMicken, C., & Rynn, M. A. (2007). Social anxiety disorder in children and adolescents: epidemiology, diagnosis, and treatment. *Pediatric Drugs*, 9, 227-237. <https://doi.org/10.2165/00148581-200709040-00004>
- Kindred, R., Bates, G. W., & McBride, N. L. (2022). Long-term outcomes of cognitive behavioural therapy for social anxiety disorder: A meta-analysis of randomised controlled trials. *Journal of anxiety disorders*, 92, 102640. <https://doi.org/10.1016/j.janxdis.2022.102640>

- Klug, D., Y. Qin, M. Evans, & G. Kaufman. (2021). Trick and please: A mixed-method study on user assumptions about the TikTok algorithm. In *Proceedings of the 13th ACM Web Science Conference* (pp. 84-92).
- Kress, G., and T. Van Leeuwen. (2001). *Multimodal Discourse: The Modes and Media of Contemporary Communication*. Arnold.
- Kress, G., and T. Van Leeuwen. (2021). *Reading images: The grammar of visual design* (3rd ed.). Routledge.
- Kumar, A., & Nayar, K. R. (2021). COVID 19 and its mental health consequences. *Journal of Mental Health*, 30(1), 1-2. <https://doi.org/10.1080/09638237.2020.1757052>
- Laucuka, A. (2018). Communicative functions of hashtags. *Economics and Culture*, 15(1), 56-62. <https://doi.org/10.2478/jec-2018-0006>
- Le Blanc, A. L., Bruce, L. C., Heimberg, R. G., Hope, D. A., Blanco, C., Schneier, F. R., & Liebowitz, M. R. (2014). Evaluation of the psychometric properties of two short forms of the social interaction anxiety scale and the social phobia scale. *Assessment*, 21(3), 312-323. <https://doi.org/10.1177/1073191114521279>
- Ledin, P., and D. Machin. (2018). *Doing visual analysis: From theory to practice*. Sage.
- Ledin, P., and D. Machin. (2020). *Introduction to multimodal analysis*. Bloomsbury Publishing.
- Letamendi, A. M., Chavira, D. A., & Stein, M. B. (2009). Issues in the assessment of social phobia: a review. *The Israel journal of psychiatry and related sciences*, 46(1), 13-24.
- Li, Y., Guan, M., Hammond, P., & Berrey, L. E. (2021). Communicating COVID-19 information on TikTok: a content analysis of TikTok videos from official accounts featured in the COVID-19 information hub. *Health education research*, 36(3), 261-271. <https://doi.org/10.1093/her/cyab010>

Liebowitz, M. R. (1987). Liebowitz social anxiety scale. *Journal of Anxiety Disorders*.

<https://doi.org/10.1037/t07671-000>

Liebowitz, M. R. (1987). Social phobia. *Modern problems of pharmacopsychiatry*, 22(141), e173.g

Lincoln, Y. S., and E. G. Guba. (1985). *Naturalistic inquiry*. Sage Publications.

Lochner, C., Mogotsi, M., du Toit, P. L., Kaminer, D., Niehaus, D. J., & Stein, D. J. (2003).

Quality of life in anxiety disorders: a comparison of obsessive-compulsive disorder, social anxiety disorder, and panic disorder. *Psychopathology*, 36(5), 255-262.

<https://doi.org/10.1159/000073451>

Lyons, A. C. (2000). Examining media representations: Benefits for health psychology. *Journal of health psychology*, 5(3), 349-358.

<https://doi.org/10.1177/135910530000500307>

Ma, L., Mazidi, M., Li, K., Li, Y., Chen, S., Kirwan, R., ... & Wang, Y. (2021). Prevalence of mental health problems among children and adolescents during the COVID-19

pandemic: A systematic review and meta-analysis. *Journal of Affective Disorders*,

293(1), 78-89. <https://doi.org/10.1016/j.jad.2021.06.021>

Machin, D. (2013). What is multimodal critical discourse studies?. *Critical discourse studies*,

10(4), 347-355. <https://doi.org/10.1080/17405904.2013.813770>

Machin, D., & Mayr, A. (2012). *How to Do Critical Discourse Analysis: A Multimodal Introduction*. Sage.

Machin, D., & Mayr, A. (2023). *How to do critical discourse analysis: A multimodal introduction*. Sage Publications.

Martin, E. I., Ressler, K. J., Binder, E., & Nemeroff, C. B. (2009). The neurobiology of anxiety disorders: brain imaging, genetics, and psychoneuroendocrinology. *The*

Psychiatric clinics of North America, 32(3), 549-575.

<https://doi.org/10.1016/j.psc.2009.05.004>

Mathyssek, C. M., Olino, T. M., Hartman, C. A., Ormel, J., Verhulst, F. C., & Van Oort, F.

V. (2013). Does the Revised Child Anxiety and Depression Scale (RCADS) measure anxiety symptoms consistently across adolescence? The TRAILS study. *International journal of methods in psychiatric research*, 22(1), 27-35.

<https://doi.org/10.1002/mpr.1380>

McCashin, D., & Murphy, C. M. (2023). Using TikTok for public and youth mental health—A systematic review and content analysis. *Clinical Child Psychology and*

Psychiatry, 28(1), 279-306. <https://doi.org/10.1177/13591045221106608>

McKim, C. (2023). Meaningful member-checking: a structured approach to member-checking. *American Journal of Qualitative Research*, 7(2), 41-52.

<https://doi.org/10.29333/ajqr/12973>

McMullan, R. D., Berle, D., Arnáez, S., & Starcevic, V. (2019). The relationships between health anxiety, online health information seeking, and cyberchondria: Systematic review and meta-analysis. *Journal of affective disorders*, 245(1), 270-278.

<https://doi.org/10.1016/j.jad.2018.11.037>

Mewton, L., Hobbs, M. J., Sunderland, M., Newby, J., & Andrews, G. (2014). Reductions in the internalising construct following internet-delivered treatment for anxiety and depression in primary care. *Behaviour Research and Therapy*, 63, 132-138.

<https://doi.org/10.1016/j.brat.2014.10.001>

Modini, M., Abbott, M. J., & Hunt, C. (2015). A systematic review of the psychometric properties of trait social anxiety self-report measures. *Journal of Psychopathology and Behavioral Assessment*, 37, 645-662. <https://doi.org/10.1007/s10862-015-9483-0>

- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group*, T. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Annals of internal medicine*, 151(4), 264-269.
<https://doi.org/10.7326/0003-4819-151-4-200908180-00135>
- Mokkink, L. B., Boers, M., Van Der Vleuten, C. P. M., Bouter, L. M., Alonso, J., Patrick, D. L., ... & Terwee, C. B. (2020). COSMIN Risk of Bias tool to assess the quality of studies on reliability or measurement error of outcome measurement instruments: a Delphi study. *BMC medical research methodology*, 20(293), 1-13.
<https://doi.org/10.1186/s12874-020-01179-5>
- Mokkink, L. B., Boers, M., van der Vleuten, C., Patrick, D. L., Alonso, J., Bouter, L. M., ... & Terwee, C. B. (2021). COSMIN risk of bias tool to assess the quality of studies on reliability and measurement error of outcome measurement instrument. *BMC Med Res Methodol*, 1, 293. https://www.cosmin.nl/wp-content/uploads/user-manual-COSMIN-Risk-of-Bias-tool_v4_JAN_final.pdf
- Mokkink, L. B., De Vet, H. C., Prinsen, C. A., Patrick, D. L., Alonso, J., Bouter, L. M., & Terwee, C. B. (2018). COSMIN risk of bias checklist for systematic reviews of patient-reported outcome measures. *Quality of Life Research*, 27(5), 1171-1179
<https://doi.org/10.1007/s11136-017-1765-4>
- Mokkink, L. B., Elsman, E. B. M., & Terwee, C. B. (2024). COSMIN guideline for systematic reviews of patient-reported outcome measures version 2.0. *Quality of Life Research*, 33(37). <https://doi.org/10.1007/s11136-024-03761-6>
- Mokkink, L. B., Terwee, C. B., Knol, D. L., Stratford, P. W., Alonso, J., Patrick, D. L., ... & De Vet, H. C. (2010). The COSMIN checklist for evaluating the methodological quality of studies on measurement properties: a clarification of its content. *BMC medical research methodology*, 10(22), 1-8. <https://doi.org/10.1186/1471-2288-10-22>

- Mokkink, L., Terwee, C., & de Vet, H. (2021). Key concepts in clinical epidemiology: responsiveness, the longitudinal aspect of validity. *Journal of clinical epidemiology*, 140, 159-162. <https://doi.org/10.1016/j.jclinepi.2021.06.002>
- Mordecai, C. (2023). # anxiety: A multimodal discourse analysis of narrations of anxiety on tiktok. *Computers and Composition*, 67, 102763. <https://doi.org/10.1016/j.compcom.2023.102763>
- Morizot, J., Ainsworth, A. T., & Reise, S. P. (2007). Toward modern psychometrics: Application of item response theory models in personality research. In *Handbook of research methods in personality psychology* (pp.407-423). The Guilford Press.
- Mörtberg, E., & Jansson Fröjmark, M. (2019). Psychometric evaluation of the social phobia inventory and the mini-social phobia inventory in a Swedish university student sample. *Psychological Reports*, 122(1), 323-339. <https://doi.org/10.1177/0033294118755097>
- Motulsky, S. L. (2021). Is member checking the gold standard of quality in qualitative research?. *Qualitative Psychology*, 8(3), 389. <https://doi.org/10.1037/qup0000215>
- Murray, C. (2024, May 3). *Man or bear? Many women say they'd rather be stuck in the woods with a bear in latest viral TikTok debate.* Forbes. <https://www.forbes.com/sites/conormurray/2024/05/03/man-or-bear-many-women-say-theyd-rather-be-stuck-in-the-woods-with-a-bear-in-latest-viral-tiktok-debate/#:~:text=Key%20Facts,domestic%20violence%20and%20sexual%20assault.>
- National Institute for Health and Care Excellence (2011). *Generalised anxiety disorder and panic disorder in adults: Management* (Clinical Guideline No. CG113). <https://www.nice.org.uk/guidance/cg113>

National Institute for Health and Care Excellence (2013). *Social anxiety disorder:*

Recognition, assessment and treatment (Clinical Guideline No. CG159).

<https://www.nice.org.uk/guidance/cg159>

Nesi, J. (2022, March 26). *Can TikTok diagnose your anxiety?*

TechnoSapiens.<https://technosapiens.substack.com/p/mentalhealthtiktok>

Nesse, R. M. (1994). Fear and fitness: An evolutionary analysis of anxiety

disorders. *Ethology and sociobiology*, 15(5-6), 247-261. [https://doi.org/10.1016/0162-3095\(94\)90002-7](https://doi.org/10.1016/0162-3095(94)90002-7)

Norman, G. R., Sloan, J. A., & Wywich, K. W. (2003). Interpretation of changes in health-related quality of life: the remarkable universality of half a standard

deviation. *Medical care*, 41(5), 582-592.

<https://doi.org/10.1097/01.MLR.0000062554.74615.4C>

Nuss, P. (2015). Anxiety disorders and GABA neurotransmission: a disturbance of

modulation. *Neuropsychiatric disease and treatment*, 11, 165-175.

<https://doi.org/10.2147/NDT.S58841>

O'Day, E. B., & Heimberg, R. G. (2021). Social media use, social anxiety, and loneliness: A systematic review. *Computers in Human Behavior Reports*, 3, 10007.

<https://doi.org/10.1016/j.chbr.2021.100070>

Oakman, J., Van Ameringen, M., Mancini, C., & Farvolden, P. (2003). A confirmatory factor analysis of a self-report version of the Liebowitz Social Anxiety Scale. *Journal of*

Clinical Psychology, 59(1), 149-161. <https://doi.org/10.1002/jclp.10124>

Olfson, M., Guardino, M., Struening, E., Schneier, F. R., Hellman, F., & Klein, D. F. (2000).

Barriers to the treatment of social anxiety. *American Journal of Psychiatry*, 157(4),

521-527. <https://doi.org/10.1176/appi.ajp.157.4.521>

- Olsson, I., & Dahl, A. A. (2012). Avoidant personality problems—their association with somatic and mental health, lifestyle, and social network. A community-based study. *Comprehensive psychiatry*, 53(6), 813-821.
<https://doi.org/10.1016/j.comppsy.2011.10.007>
- Online safety Act 2023, c.50 (UK). <https://www.legislation.gov.uk/ukpga/2023/50>
- Osório, F. D. L., Crippa, J. A. S., & Loureiro, S. R. (2010). Further study of the psychometric qualities of a brief screening tool for social phobia (MINI-SPIN) applied to clinical and nonclinical samples. *Perspectives in Psychiatric Care*, 46(4), 266-278.
<https://doi.org/10.1111/j.1744-6163.2010.00261.x>
- Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan—a web and mobile app for systematic reviews. *Systematic reviews*, 5, 1-10.
<https://doi.org/10.1186/s13643-016-0384-4>.
- Oxford University Press. (n.d.). Paraphrase, n. In *Oxford English dictionary*. Retrieved July 25, 2025, from <https://doi.org/10.1093/OED/9447560396>
- Oyighan, D., & Okwu, E. (2024). Social media for information dissemination in the digital era. *RAY: International Journal of Multidisciplinary Studies*, 10(1), 1-21.
- Palaganas, E. C., Sanchez, M. C., Molintas, M. P., & Caricativo, R. D. (2017). Reflexivity in Qualitative Research: A Journey of Learning. *The Qualitative Report*, 22(2), 426-438.
<https://doi.org/10.46743/2160-3715/2017.2552>
- Park, Y. S., Konge, L., & Artino Jr, A. R. (2020). The positivism paradigm of research. *Academic medicine*, 95(5), 690-694.
<https://doi.org/10.1097/ACM.0000000000003093>
- Pavelko, R. L., & Myrick, J. G. (2015). That's so OCD: The effects of disease trivialization via social media on user perceptions and impression formation. *Computers in Human Behavior*, 49, 251-258. <https://doi.org/10.1016/j.chb.2015.02.061>

- Pavlova, A., & Berkers, P. (2020). Mental health discourse and social media: Which mechanisms of cultural power drive discourse on Twitter. *Social Science & Medicine*, 263, 113250. <https://doi.org/10.1016/j.socscimed.2020.113250>
- Pavlova, A., & Berkers, P. (2022). "Mental health" as defined by Twitter: Frames, emotions, stigma. *Health Communication*, 37(5), 637-647.
<https://doi.org/10.1080/10410236.2020.1862396>
- Pretorius, C., Chambers, D., Cowan, B., & Coyle, D. (2019). Young people seeking help online for mental health: Cross-sectional survey study. *JMIR Mental Health*, 6(8), e13524. <https://doi.org/10.2196/13524>
- Price, J. S. (2003). Evolutionary aspects of anxiety disorders. *Dialogues in clinical neuroscience*, 5(3), 223-236. <https://doi.org/10.31887/DCNS.2003.5.3/jprice>
- Ranta, K., Kaltiala-Heino, R., Rantanen, P., & Marttunen, M. (2012). The Mini-Social Phobia Inventory: psychometric properties in an adolescent general population sample. *Comprehensive psychiatry*, 53(5), 630-637.
<https://doi.org/10.1016/j.comppsy.2011.07.007>
- Rao, P. A., Beidel, D. C., Turner, S. M., Ammerman, R. T., Crosby, L. E., & Sallee, F. R. (2007). Social anxiety disorder in childhood and adolescence: Descriptive psychopathology. *Behaviour Research and Therapy*, 45(6), 1181-1191.
<https://doi.org/10.1016/j.brat.2006.07.015>
- Rathy, A. (2023). A systematic review: The influence of TikTok contents and its effects towards mental health among youth in Malaysia. *Journal of Media and Information Warfare*, 16(1), 1-13.
- Reise, S. P., & Waller, N. G. (2009). Item response theory and clinical measurement. *Annual review of clinical psychology*, 5(1), 27-48.
<https://doi.org/10.1146/annurev.clinpsy.032408.153553>

- Ressler, K. J., & Nemeroff, C. B. (2000). Role of serotonergic and noradrenergic systems in the pathophysiology of depression and anxiety disorders. *Depression and anxiety*, 12(1), 2-19. [https://doi.org/10.1002/1520-6394\(2000\)12:1+<2::AID-DA2>3.0.CO;2-4](https://doi.org/10.1002/1520-6394(2000)12:1+<2::AID-DA2>3.0.CO;2-4)
- Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and social psychology bulletin*, 27(2), 151-161. <https://doi.org/10.1177/0146167201272002>
- Robinson, P., Turk, D., Jilka, S., & Cella, M. (2019). Measuring attitudes towards mental health using social media: Investigating stigma and trivialisation. *Social Psychiatry and Psychiatric Epidemiology*, 54(1), 51-58. <https://doi.org/10.1007/s00127-018-1571-5>
- Rodebaugh, T. L., Woods, C. M., Thissen, D. M., Heimberg, R. G., Chambless, D. L., & Rapee, R. M. (2004). More information from fewer questions: the factor structure and item properties of the original and brief fear of negative evaluation scale. *Psychological assessment*, 16(2), 169-181. <https://doi.org/10.1037/1040-3590.16.2.169>
- Rose, G. M., & Tadi, P. (2022). Social anxiety disorder. In *StatPearls* [Internet]. StatPearls Publishing.
- Rose, N. S., & Abi-Rached, J. M. (2013). *Neuro: The New Brain Sciences and the Management of the Mind*. Princeton University Press.
- Rust, J., & Golombok, S. (2014). *Modern psychometrics: The science of psychological assessment*. Routledge.

- Rynn, M. A., & Brawman-Mintzer, O. (2004). Generalized anxiety disorder: acute and chronic treatment. *CNS spectrums*, 9(10), 716-723. <https://doi.org/10.1017/S1092852900022367>
- Sadagheyani, H. E., & Tatari, F. (2021). Investigating the role of social media on mental health. *Mental Health and Social Inclusion*, 25(1), 41-51. <https://doi.org/10.1108/MHSI-06-2020-0039>
- Safren, S. A., Turk, C. L., & Heimberg, R. G. (1998). Factor structure of the social interaction anxiety scale and the social phobia scale. *Behaviour research and therapy*, 36(4), 443-453. [https://doi.org/10.1016/S0005-7967\(98\)00032-1](https://doi.org/10.1016/S0005-7967(98)00032-1)
- Safren, S. A., Turk, C. L., & Heimberg, R. G. (1998). Factor structure of the social interaction anxiety scale and the social phobia scale. *Behaviour research and therapy*, 36(4), 443-453. [https://doi.org/10.1016/S0005-7967\(98\)00032-1](https://doi.org/10.1016/S0005-7967(98)00032-1)
- Salafuddin, A. (2022). Using Social Media as Self-Disclosure Media (Multimodal Discourse Analysis of Gay Homosexual Content on TikTok). *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, 5(2). <https://doi.org/10.33258/birci.v5i2.5558>
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., ... & Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity*, 52, 1893-1907. <https://doi.org/10.1007/s11135-017-0574-8>
- Schaadhardt, A., Fu, Y., Pratt, C. G., & Pratt, W. (2023). “Laughing so I don’t cry”: How TikTok users employ humor and compassion to connect around psychiatric hospitalization. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* (pp. 1-13).

- Schiavo, J. H. (2019). PROSPERO: an international register of systematic review protocols. *Medical reference services quarterly*, 38(2), 171-180.
<https://doi.org/10.1080/02763869.2019.1588072>
- Schmidt, F. L., Le, H., & Ilies, R. (2003). Beyond alpha: An empirical examination of the effects of different sources of measurement error on reliability estimates for measures of individual-differences constructs. *Psychological methods*, 8(2), 206-224.
<https://doi.org/10.1037/1082-989X.8.2.206>
- Sedaghat, A. R. (2019). Understanding the minimal clinically important difference (MCID) of patient-reported outcome measures. *Otolaryngology–Head and Neck Surgery*, 161(4), 551-560. <https://doi.org/10.1177/0194599819852604>
- Seeley-Wait, E., Abbott, M. J., & Rapee, R. M. (2009). Psychometric properties of the mini-social phobia inventory. *Primary Care Companion to the Journal of Clinical Psychiatry*, 11(5), 231-236. <https://doi.org/10.4088/PCC.07m00576>
- Segars, A. H. (1997). Assessing the unidimensionality of measurement: A paradigm and illustration within the context of information systems research. *Omega*, 25(1), 107-121. [https://doi.org/10.1016/S0305-0483\(96\)00051-5](https://doi.org/10.1016/S0305-0483(96)00051-5)
- Sheehan, D. V., Lecrubier, Y., Sheehan, K. H., Amorim, P., Janavs, J., Weiller, E., ... & Dunbar, G. C. (1998). The Mini-International Neuropsychiatric Interview (MINI): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychiatry*, 59(20), 22-33.
- Silverman, W. K., & van Schalkwyk, G. I. (2019). What is anxiety?. In Compton, S. N., Villabo, M. A., & Kristensen, H. *Pediatric anxiety disorders* (pp. 7-16). Academic Press. <https://doi.org/10.1016/B978-0-12-813004-9.00002-5>

- Smith, D. T. (2014). The diminished resistance to medicalization in psychiatry: Psychoanalysis meets the medical model of mental illness. *Society and Mental Health*, 4(2), 75-91. <https://doi.org/10.1177/2156869313512211>.
- Spearman, C. (1961). The Proof and Measurement of Association Between Two Things. In J. J. Jenkins & D. G. Paterson (Eds.), *Studies in individual differences: The search for intelligence* (pp. 45-58). Appleton-Century-Crofts. <https://doi.org/10.1037/11491-005>
- Speerforck, S., Jürgensen, V., Göbel, M., Meyer, N., & Schomerus, G. (2024). ‘Concept creep’ in perceptions of mental illness—an experimental examination of prevalence-induced concept change. *European archives of psychiatry and clinical neuroscience*, 1-5. <https://doi.org/10.1007/s00406-023-01737-0>
- Spielberger, C. D. (Ed.). (2013). *Anxiety and behavior*. Academic press.
- Spielberger, C. D., Gonzalez-Reigosa, F., Martinez-Urrutia, A., Natalicio, L. F., & Natalicio, D. S. (1971). The state-trait anxiety inventory. *Interamerican journal of psychology*, 5(3), 145-158. <https://doi.org/10.30849/rip/ijp.v5i3%20&%204.620>
- Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of internal medicine*, 166(10), 1092-1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Srivastava, K., Chaudhury, S., Bhat, P. S., & Mujawar, S. (2018). Media and mental health. *Industrial psychiatry journal*, 27(1), 1-5. https://doi.org/10.4103/ipj.ipj_73_18
- Steimer, T. (2002). The biology of fear-and anxiety-related behaviors. *Dialogues in clinical neuroscience*, 4(3), 231-249. <https://doi.org/10.31887/DCNS.2002.4.3/tsteimer>
- Stein, M. B., & Stein, D. J. (2008). Social anxiety disorder. *The Lancet*, 371(9618), 1115-1125. [https://doi.org/10.1016/S0140-6736\(08\)60488-2](https://doi.org/10.1016/S0140-6736(08)60488-2)
- Stentiford, L., Koutsouris, G., & Allan, A. (2023). ‘They think it’s trendy to have a disability/mental-illness’: disability, capital and desire in elite education. *British*

Journal of Sociology of Education, 44(6), 1067-1086.

<https://doi.org/10.1080/01425692.2023.2237199>

Stuart, H. (2006). Media portrayal of mental illness and its treatments: what effect does it have on people with mental illness?. *CNS drugs*, 20(2), 99-106.

<https://doi.org/10.2165/00023210-200620020-00002>

Stupinski, A. M., Alshaabi, T., Arnold, M. V., Adams, J. L., Minot, J. R., Price, M., et al. (2022). Quantifying changes in the language used around mental health on Twitter over 10 years: Observational study. *JMIR Mental Health*, 9(3), e33685.

<https://doi.org/10.2196/33685>

Suarez-Lledo, V., & Alvarez-Galvez, J. (2021). Prevalence of health misinformation on social media: Systematic review. *Journal of Medical Internet Research*, 23(1), e17187. <https://doi.org/10.2196/17187>

Suh, E. K. (2021). Adoptees SPEAK: A multimodal critical discourse analysis of adult Korean adopted persons' adoption narratives on Instagram. *Critical Inquiry in Language Studies*, 18(1), 65-84. <https://doi.org/10.1080/15427587.2020.1796486>

Sunderland, M., Batterham, P., Cascar, A., Carragher, N., Baillie, A., & Slade, T. (2018). High agreement was obtained across scores from multiple equated scales for social anxiety disorder using item response theory. *Journal of clinical epidemiology*, 99, 132-143. <https://doi.org/10.1016/j.jclinepi.2018.04.003>

Szuhany, K. L., & Simon, N. M. (2022). Anxiety disorders: a review. *Jama*, 328(24), 2431-2445. <https://doi.org/10.1001/jama.2022.22744>

Tebartz van Elst, L., Pick, M., Biscaldi, M., Fangmeier, T., & Riedel, A. (2013). High-functioning autism spectrum disorder as a basic disorder in adult psychiatry and psychotherapy: psychopathological presentation, clinical relevance and therapeutic

- concepts. *European archives of psychiatry and clinical neuroscience*, 263(2), 189-196. <https://doi.org/10.1007/s00406-013-0459-3>
- Terwee, C. B., & Prinsen, C. A. C. (2018). *Help organizing your COSMIN risk of bias ratings [Excel form]*. <https://www.cosmin.nl/tools/guideline-conducting-systematic-review-outcome-measures/>
- Terwee, C. B., Bot, S. D., de Boer, M. R., Van der Windt, D. A., Knol, D. L., Dekker, J., ... & de Vet, H. C. (2007). Quality criteria were proposed for measurement properties of health status questionnaires. *Journal of clinical epidemiology*, 60(1), 34-42. <https://doi.org/10.1016/j.jclinepi.2006.03.012>
- Terwee, C. B., Jansma, E. P., Riphagen, I. I., & de Vet, H. C. (2009). Development of a methodological PubMed search filter for finding studies on measurement properties of measurement instruments. *Quality of Life Research*, 18, 1115-1123. <https://doi.org/10.1007/s11136-009-9528-5>
- Terwee, C. B., Prinsen, C. A. C., Ricci Garotti, M. G., Suman, A., De Vet, H. C. W., & Mokkink, L. B. (2016). The quality of systematic reviews of health-related outcome measurement instruments. *Quality of Life Research*, 25, 767-779. <https://doi.org/10.1007/s11136-015-1122-4>
- Terwee, C. B., Prinsen, C. A., Chiarotto, A., Westerman, M. J., Patrick, D. L., Alonso, J., ... & Mokkink, L. B. (2018). COSMIN methodology for evaluating the content validity of patient-reported outcome measures: a Delphi study. *Quality of Life Research*, 27, 1159-1170. <https://doi.org/10.1007/s11136-018-1829-0>
- Terwee, C. B., Prinsen, C., Chiarotto, A., De Vet, H., Bouter, L. M., Alonso, J., ... & Mokkink, L. B. (2018). COSMIN methodology for assessing the content validity of PROMs—user manual. *VU University Medical Center*, 1159-70.

- TikTok. (2024). *Community Guidelines* [guidelines]. TikTok.
<https://www.tiktok.com/community-guidelines/en>
- Ting, Z. H. O. U. (2021). The media images of old influencers on TikTok: A multimodal critical discourse analysis. *Journal of Literature and Art Studies*, 11(10), 809-816.
<https://doi.org/10.17265/2159-5836/2021.10.013>
- Trombeta, G., & Cox, S. M. (2022). The textual-visual thematic analysis: A framework to analyze the conjunction and interaction of visual and textual data. *The qualitative report*, 27(6), 1557-1574. <https://doi.org/10.46743/2160-3715/2022.5456>
- Tudehope, L., Harris, N., Vorage, L., & Sofija, E. (2024). What methods are used to examine representation of mental ill-health on social media? A systematic review. *BMC psychology*, 12(1), 105. <https://doi.org/10.1186/s40359-024-01603-1>
- Urquhart, C.(2013). *Grounded Theory for Qualitative Research: A Practical Guide*. Sage
- Vidamaly, S., & Lee, S. L. (2021). Young adults' mental illness aesthetics on social media. *International Journal of Cyber Behavior, Psychology and Learning*, 11(2), 13-32.
<https://doi.org/10.4018/IJCBPL.2021040102>
- Wahl, O. F. (1992). Mass media images of mental illness: A review of the literature. *Journal of Community Psychology*, 20(4), 343-352. [https://doi.org/10.1002/1520-6629\(199210\)20:4<343::AID-JCOP2290200408>3.0.CO;2-2](https://doi.org/10.1002/1520-6629(199210)20:4<343::AID-JCOP2290200408>3.0.CO;2-2)
- Walker, M., King, G. A., & Hartman, L. R. (2018). Exploring the potential of social media platforms as data collection methods for accessing and understanding experiences of youth with disabilities: a narrative review. *The Journal of Social Media in Society*, 7(2), 43-68. <http://orcid.org/0000-0001-7246-7863>
- Wandel, T. (2001). The power of discourse: Michel Foucault and critical theory. *Journal for Cultural Research*, 5(3), 368-382. <https://doi.org/10.1080/14797580109367237>

- Weeks, J. W., Spokas, M. E., & Heimberg, R. G. (2007). Psychometric evaluation of the mini-social phobia inventory (Mini-SPIN) in a treatment-seeking sample. *Depression and anxiety*, 24(6), 382-391. <https://doi.org/10.1002/da.20250>
- Weinberger, A. H., Darkes, J., Del Boca, F. K., Greenbaum, P. E., & Goldman, M. S. (2006). Items as context: Effects of item order and ambiguity on factor structure. *Basic and Applied Social Psychology*, 28(1), 17-26.
https://doi.org/10.1207/s15324834basp2801_2
- Welch, L. C., Trudeau, J. J., Silverstein, S. M., Sand, M., Henderson, D. C., & Rosen, R. C. (2017). Initial development of a patient-reported outcome measure of experience with cognitive impairment associated with schizophrenia. *Patient Related Outcome Measures*, 8(1), 71-81. <https://doi.org/10.2147/PROM.S123266>
- White, M. B., & Hall, A. E. (1980). An overview of intelligence testing. *Educational Horizons*, 58(4), 210-216. <https://www.jstor.org/stable/42924403>
- Whorf, B. L. (2012). *Language, thought, and reality: Selected writings of Benjamin Lee Whorf*. MIT press.
- Whorf, B.L., (1956) Science and linguistics. In: Carroll JB, ed. *Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf* (pp. 207-219). MIT Press.
- Wiltink, J., Kliem, S., Michal, M., Subic-Wrana, C., Reiner, I., Beutel, M. E., ... & Zwerenz, R. (2017). Mini-social phobia inventory (mini-SPIN): psychometric properties and population based norms of the German version. *BMC psychiatry*, 17, 1-10.
<https://doi.org/10.1186/s12888-017-1545-2>
- Wright, A., Hannon, J., Hegedus, E. J., & Kavchak, A. E. (2012). Clinimetrics corner: a closer look at the minimal clinically important difference (MCID). *Journal of Manual & Manipulative Therapy*, 20(3), 160-166.
<https://doi.org/10.1179/2042618612Y.0000000001>

- Wyrwich, K. W., Nienaber, N. A., Tierney, W. M., & Wolinsky, F. D. (1999). Linking clinical relevance and statistical significance in evaluating intra-individual changes in health-related quality of life. *Medical care*, 37(5), 469-478.
- Xu, X., Dai, J., Chen, Y., Liu, C., Xin, F., Zhou, X., ... & Becker, B. (2021). Intrinsic connectivity of the prefrontal cortex and striato-limbic system respectively differentiate major depressive from generalized anxiety disorder. *Neuropsychopharmacology*, 46(4), 791-798. <https://doi.org/10.1038/s41386-020-00868-5>
- Yardley, L. (2000). Dilemmas in qualitative health research. *Psychology and Health*, 15(2), 215-228. <https://doi.org/10.1080/08870440008400302>
- Yoon, S., Speyer, R., Cordier, R., Aunio, P., & Hakkarainen, A. (2021). A systematic review evaluating psychometric properties of parent or caregiver report instruments on child maltreatment: Part 2: Internal consistency, reliability, measurement error, structural validity, hypothesis testing, cross-cultural validity, and criterion validity. *Trauma, Violence, & Abuse*, 22(5), 1296-1315. <https://doi.org/10.1177/1524838020915591>
- Zhang, Y., Fu, J., Lai, J., Deng, S., Guo, Z., Zhong, C., ... & Wu, Y. (2024). Reporting of Ethical Considerations in Qualitative Research Utilizing Social Media Data on Public Health Care: Scoping Review. *Journal of Medical Internet Research*, 26, e51496. <https://doi.org/10.2196/51496>
- Zhao, S., Djonov, E., Björkvall, A., & Boeriis, M. (2017). *Advancing multimodal and critical discourse studies*. Taylor & Francis.
- Zheluk, A. A., Anderson, J., & Dineen-Griffin, S. (2022). Adolescent anxiety and TikTok: An exploratory study. *Cureus*, 14(12), e32530. <https://doi.org/10.7759/cureus.32530>

- Zhu, H., Wu, H., Cao, J., Fu, G., & Li, H. (2018). Information dissemination model for social media with constant updates. *Physica A: Statistical Mechanics and its Applications*, 502, 469-482. <https://doi.org/10.1016/j.physa.2018.02.142>
- Ziebland, S. U. E., & Wyke, S. (2012). Health and illness in a connected world: How might sharing experiences on the internet affect people's health? *The Milbank Quarterly*, 90(2), 219-249. <https://doi.org/10.1111/j.1468-0009.2012.00662.x>

Appendices

Appendix A: Journal requirements for the Journal of Affective Disorders

Appendix B: PRSIMA Checklist

Appendix C: Deviations from PROSPERO registration

Appendix D: Full search strategy

Appendix E: COSMIN criteria for good measurement properties and COSMIN definitions of measurement properties

Appendix F: Prior hypothesis set for construct validity and responsiveness with rationales

Appendix G: Table for determining GRADE and downgrading based on Risk of bias, imprecision, inconsistency and indirectness

Appendix H: Studies excluded and rationales

Appendix I: Risk of Bias and demographic information for included studies

Appendix J: Content validity table showing reviewer ratings of content validity for Mini-SPIN, Mini-SPIN-R and all language versions

Appendix K: Gold standard comparators for criterion validity

Appendix L: Extracted data for each study per OMI

Appendix M: Journal requirements for Qualitative Research in Psychology Journal

Appendix N: Consolidated criteria for Reporting Qualitative research checklist (COREQ)

Appendix O: Ethical approval letter from UEA FMH S-REC

Appendix P: Flow diagram illustrating process of analysis

Appendix Q: Screenshot extract from excel sheet illustrating initial coding process

Appendix R: Amendment to ethics for new hashtag

Appendix S: Example of the analytic process and descriptions of levels of analysis

Appendix T: Codebook for comments under #anxiety

Appendix U: Codebook for comments under #socialanxiety

Appendix A

Journal requirements for the Journal of Affective Disorders

19/01/2025, 11:10

Guide for authors - Journal of Affective Disorders - ISSN 0165-0327 | ScienceDirect.com by Elsevier

1

- [Responsible sharing](#)

Resources for authors

- [Elsevier Researcher Academy](#)
- [Language and editing services](#)

Getting help and support

- [Author support](#)

About the journal

Aims and scope

Official Journal of the [International Society for Affective Disorders](#) *The Journal of Affective Disorders* publishes papers concerned with affective disorders in the widest sense: depression, mania, mood spectrum, emotions and personality, anxiety and stress. It is interdisciplinary and aims to bring together different approaches for a diverse readership. Top quality papers will be accepted dealing with any aspect of affective disorders, including neuroimaging, cognitive neurosciences, genetics, molecular biology, experimental and clinical neurosciences, pharmacology, neuroimmunoenocrinology, intervention and treatment trials.

Journal of Affective Disorders is the companion title to the open access [Journal of Affective Disorders Reports](#).

Article types

The Journal primarily publishes:

Full-Length Research Papers

(up to 5000 words, excluding references and up to 6 tables/figures)

Review Articles and Meta-analyses

(up to 8000 words, excluding references and up to 10 tables/figures)

Short Communications

(up to 2000 words, 20 references, 2 tables/figures)

Correspondence

(up to 1000 words, 10 references, 1 table/figure).

At the discretion of the accepting Editor-in-Chief, and/or based on reviewer feedback, authors may be allowed fewer or more than these guidelines.

Peer review

This journal follows a single anonymized review process. Your submission will initially be assessed by our editors to determine suitability for publication in this journal. If your submission is deemed suitable, it will typically be sent to a minimum of two reviewers for an independent expert assessment of the scientific quality. The decision as to whether your article is accepted or rejected will be taken by our editors. Authors who wish to appeal the editorial decision for their manuscript may submit a formal appeal request in accordance with the procedure outlined in [Elsevier's Appeal Policy](#). Only one appeal per submission will be considered and the appeal decision will be final.

Read more about [peer review](#).

Our editors are not involved in making decisions about papers which:

- they have written themselves.
- have been written by family members or colleagues.
- relate to products or services in which they have an interest.

Any such submissions will be subject to the journal's usual procedures and peer review will be handled independently of the editor involved and their research group. Read more about [editor duties](#).

Special issues and article collections

The peer review process for special issues and article collections follows the same process as outlined above for regular submissions, except, a guest editor will send the submissions out to the reviewers and may recommend a decision to the journal editor. The journal editor oversees the peer review process of all special issues and article collections to ensure the high standards of publishing ethics and responsiveness are respected and is responsible for the final decision regarding acceptance or rejection of articles.

Open access

We refer you to our [open access information page](#) to learn about open access options for this journal.

Ethics and policies

Ethics in publishing

Authors must follow ethical guidelines stated in [Elsevier's Publishing Ethics Policy](#).

Submission declaration

When authors submit an article to an Elsevier journal it is implied that:

- the work described has not been published previously except in the form of a preprint, an abstract, a published lecture, academic thesis or registered report. See our policy on [multiple, redundant or concurrent publication](#).
- the article is not under consideration for publication elsewhere.
- the article's publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out.
- if accepted, the article will not be published elsewhere in the same form, in English or in any other language, including electronically, without the written consent of the copyright-holder.

To verify compliance with our journal publishing policies, we may check your manuscript with our screening tools.

Authorship

All authors should have made substantial contributions to all of the following:

1. The conception and design of the study, or acquisition of data, or analysis and interpretation of data.
2. Drafting the article or revising it critically for important intellectual content.
3. Final approval of the version to be submitted.

Authors should appoint a corresponding author to communicate with the journal during the editorial process. All authors should agree to be accountable for all aspects of the work to ensure that the questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Changes to authorship

The editors of this journal generally will not consider changes to authorship once a manuscript has been submitted. It is important that authors carefully consider the authorship list and order of authors and provide a definitive author list at original submission.

The policy of this journal around authorship changes:

- All authors must be listed in the manuscript and their details entered into the submission system.
- Any addition, deletion or rearrangement of author names in the authorship list should only be made prior to acceptance, and only if approved by the journal editor.

- Requests to change authorship should be made by the corresponding author, who must provide the reason for the request to the journal editor with written confirmation from all authors, including any authors being added or removed, that they agree with the addition, removal or rearrangement.
- All requests to change authorship must be submitted using [this form](#). Requests which do not comply with the instructions outlined in the form will not be considered.
- Only in exceptional circumstances will the journal editor consider the addition, deletion or rearrangement of authors post acceptance.
- Publication of the manuscript may be paused while a change in authorship request is being considered.
- Any authorship change requests approved by the journal editor will result in a corrigendum if the manuscript has already been published.
- Any unauthorised authorship changes may result in the rejection of the article, or retraction, if the article has already been published.

Declaration of interests

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence or bias their work. Examples of potential competing interests include:

- Employment
- Consultancies
- Stock ownership
- Honoraria
- Paid expert testimony
- Patent applications or registrations
- Grants or any other funding

The [Declaration of Interests tool](#) should always be completed.

Authors with no competing interests to declare should select the option, "I have nothing to declare".

The resulting Word document containing your declaration should be uploaded at the "attach/upload files" step in the submission process. It is important that the Word document is saved in the .doc/.docx file format. Author signatures are not required.

We advise you to read our [policy on conflict of interest statements, funding source declarations, author agreements/declarations and permission notes](#).

Funding sources

Authors must disclose any funding sources who provided financial support for the conduct of the research and/or preparation of the article. The role of sponsors, if any, should be declared in relation to the study design, collection, analysis and interpretation of data, writing of the report and decision to submit the article for publication. If funding sources had no such involvement this should be stated in your submission.

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants, scholarships and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, it is recommended to include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of generative AI in scientific writing

Authors must declare the use of generative AI in scientific writing upon submission of the paper. The following guidance refers only to the writing process, and not to the use of AI tools to analyse and draw insights from data as part of the research process:

- Generative AI and AI-assisted technologies should only be used in the writing process to improve the readability and language of the manuscript.
- The technology must be applied with human oversight and control and authors should carefully review and edit the result, as AI can generate authoritative-sounding output that can be incorrect, incomplete or biased. Authors are ultimately responsible and accountable for the contents of the work.
- Authors must not list or cite AI and AI-assisted technologies as an author or co-author on the manuscript since authorship implies responsibilities and tasks that can only be attributed to and performed by humans.

The use of generative AI and AI-assisted technologies in scientific writing must be declared by adding a statement at the end of the manuscript when the paper is first submitted. The statement will appear in the published work and should be placed in a new section before the references list. An example:

- Title of new section: Declaration of generative AI and AI-assisted technologies in the writing process.
- Statement: During the preparation of this work the author(s) used [NAME TOOL / SERVICE] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the published article.

The declaration does not apply to the use of basic tools, such as tools used to check grammar, spelling and references. If you have nothing to disclose, you do not need to add a statement.

Please read Elsevier's author policy on the use of generative AI and AI-assisted technologies, which can be found in our [GenAI Policies for journals](#).

Please note: to protect authors' rights and the confidentiality of their research, this journal does not currently allow the use of generative AI or AI-assisted technologies such as ChatGPT or similar services by reviewers or editors in the peer review and manuscript evaluation process, as is stated in our [GenAI Policies for journals](#). We are actively evaluating compliant AI tools and may revise this policy in the future.

Preprints

Preprint sharing

Authors may share preprints in line with Elsevier's [article sharing policy](#). Sharing preprints, such as on a preprint server, will not count as prior publication.

We advise you to read our policy on [multiple, redundant or concurrent publication](#).

Use of inclusive language

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Authors should ensure their work uses inclusive language throughout and contains nothing which might imply one individual is superior to another on the grounds of:

- age
- gender

19/01/2025, 11:10

Guide for authors - Journal of Affective Disorders - ISSN 0165-0327 | ScienceDirect.com by Elsevier

- race
- ethnicity
- culture
- sexual orientation
- disability or health condition

We recommend avoiding the use of descriptors about personal attributes unless they are relevant and valid. Write for gender neutrality with the use of plural nouns ("clinicians, patients/clients") as default. Wherever possible, avoid using "he, she," or "he/she."

No assumptions should be made about the beliefs of readers and writing should be free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions.

These guidelines are meant as a point of reference to help you identify appropriate language but are by no means exhaustive or definitive.

Reporting sex- and gender-based analyses

There is no single, universally agreed-upon set of guidelines for defining sex and gender. We offer the following guidance:

- Sex and gender-based analyses (SGBA) should be integrated into research design when research involves or pertains to humans, animals or eukaryotic cells. This should be done in accordance with any requirements set by funders or sponsors and best practices within a field.
- Sex and/or gender dimensions of the research should be addressed within the article or declared as a limitation to the generalizability of the research.
- Definitions of sex and/or gender applied should be explicitly stated to enhance the precision, rigor and reproducibility of the research and to avoid ambiguity or conflation of terms and the constructs to which they refer.

We advise you to read the [Sex and Gender Equity in Research \(SAGER\) guidelines](#) and the [SAGER checklist \(PDF\)](#) on the EASE website, which offer systematic approaches to the use of sex and gender information in study design, data analysis, outcome reporting and research interpretation.

For further information we suggest reading the rationale behind and recommended [use of the SAGER guidelines](#).

Definitions of sex and/or gender

We ask authors to define how sex and gender have been used in their research and publication. Some guidance:

- Sex generally refers to a set of biological attributes that are associated with physical and physiological features such as chromosomal genotype, hormonal levels, internal and external anatomy. A binary sex categorization (male/female) is usually designated at birth ("sex assigned at birth") and is in most cases based solely on the visible external anatomy of a newborn. In reality, sex categorizations include people who are intersex/have differences of sex development (DSD).
- Gender generally refers to socially constructed roles, behaviors and identities of women, men and gender-diverse people that occur in a historical and cultural context and may vary across societies and over time. Gender influences how people view themselves and each other, how they behave and interact and how power is distributed in society.

Jurisdictional claims

Elsevier respects the decisions taken by its authors as to how they choose to designate territories and identify their affiliations in their published content. Elsevier's policy is to take a neutral position with respect to territorial disputes or jurisdictional claims, including, but not limited to, maps and institutional

affiliations. For journals that Elsevier publishes on behalf of a third party owner, the owner may set its own policy on these issues.

- Maps: Readers should be able to locate any study areas shown within maps using common mapping platforms. Maps should only show the area actually studied and authors should not include a location map which displays a larger area than the bounding box of the study area. Authors should add a note clearly stating that "*map lines delineate study areas and do not necessarily depict accepted national boundaries*". During the review process, Elsevier's editors may request authors to change maps if these guidelines are not followed.
- Institutional affiliations: Authors should use either the full, standard title of their institution or the standard abbreviation of the institutional name so that the institutional name can be independently verified for research integrity purposes.

Writing and formatting

File format

We ask you to provide editable source files for your entire submission (including figures, tables and text graphics). Some guidelines:

- Save files in an editable format, using the extension .doc/.docx for Word files and .tex for LaTeX files. A PDF is not an acceptable source file.
- Lay out text in a single-column format.
- Remove any strikethrough and underlined text from your manuscript, unless it has scientific significance related to your article.
- Use spell-check and grammar-check functions to avoid errors.

We advise you to read our [Step-by-step guide to publishing with Elsevier](#).

Title page

You are required to include the following details in the title page information:

- Article title. Article titles should be concise and informative. Please avoid abbreviations and formulae, where possible, unless they are established and widely understood, e.g., DNA).
- Author names. Provide the given name(s) and family name(s) of each author. The order of authors should match the order in the submission system. Carefully check that all names are accurately spelled. If needed, you can add your name between parentheses in your own script after the English transliteration.
- Affiliations. Add affiliation addresses, referring to where the work was carried out, below the author names. Indicate affiliations using a lower-case superscript letter immediately after the author's name and in front of the corresponding address. Ensure that you provide the full postal address of each affiliation, including the country name and, if available, the email address of each author.
- Corresponding author. Clearly indicate who will handle correspondence for your article at all stages of the refereeing and publication process and also post-publication. This responsibility includes answering any future queries about your results, data, methodology and materials. It is important that the email address and contact details of your corresponding author are kept up to date during the submission and publication process.
- Present/permanent address. If an author has moved since the work described in your article was carried out, or the author was visiting during that time, a "present address" (or "permanent address") can be indicated by a footnote to the author's name. The address where the author carried out the work must be retained as their main affiliation address. Use superscript Arabic numerals for such footnotes.

Abstract

You are required to provide a concise and factual abstract which does not exceed 250 words. The abstract should briefly state the purpose of your research, principal results and major conclusions. Some guidelines:

- Abstracts must be able to stand alone as abstracts are often presented separately from the article.
- Avoid references. If any are essential to include, ensure that you cite the author(s) and year(s).
- Avoid non-standard or uncommon abbreviations. If any are essential to include, ensure they are defined within your abstract at first mention.

Keywords

You are required to provide 1 to 7 keywords for indexing purposes. Keywords should be written in English. Please try to avoid keywords consisting of multiple words (using "and" or "of").

We recommend that you only use abbreviations in keywords if they are firmly established in the field.

Highlights

You are required to provide article highlights at submission.

Highlights are a short collection of bullet points that should capture the novel results of your research as well as any new methods used during your study. Highlights will help increase the discoverability of your article via search engines. Some guidelines:

- Submit highlights as a separate editable file in the online submission system with the word "highlights" included in the file name.
- Highlights should consist of 3 to 5 bullet points, each a maximum of 85 characters, including spaces.

We encourage you to view example [article highlights](#) and read about the benefits of their inclusion.

Graphical abstract

You are encouraged to provide a graphical abstract at submission.

The graphical abstract should summarize the contents of your article in a concise, pictorial form which is designed to capture the attention of a wide readership. A graphical abstract will help draw more attention to your online article and support readers in digesting your research. Some guidelines:

- Submit your graphical abstract as a separate file in the online submission system.
- Ensure the image is a minimum of 531 x 1328 pixels (h x w) or proportionally more and is readable at a size of 5 x 13 cm using a regular screen resolution of 96 dpi.
- Our preferred file types for graphical abstracts are TIFF, EPS, PDF or MS Office files.

We encourage you to view example [graphical abstracts](#) and read about the benefits of including them.

Math formulae

- Submit math equations as editable text, not as images.
- Present simple formulae in line with normal text, where possible.
- Use the solidus (/) instead of a horizontal line for small fractional terms such as X/Y.
- Present variables in italics.
- Denote powers of e by exp.
- Display equations separately from your text, numbering them consecutively in the order they are referred to within your text.

Tables

Tables must be submitted as editable text, not as images. Some guidelines:

- Place tables next to the relevant text or on a separate page(s) at the end of your article.
- Cite all tables in the manuscript text.
- Number tables consecutively according to their appearance in the text.
- Please provide captions along with the tables.
- Place any table notes below the table body.
- Avoid vertical rules and shading within table cells.

We recommend that you use tables sparingly, ensuring that any data presented in tables is not duplicating results described elsewhere in the article.

Figures, images and artwork

Figures, images, artwork, diagrams and other graphical media must be supplied as separate files along with the manuscript. We recommend that you read our detailed [artwork and media instructions](#). Some excerpts:

When submitting artwork:

- Cite all images in the manuscript text.
- Number images according to the sequence they appear within your article.
- Submit each image as a separate file using a logical naming convention for your files (for example, Figure_1, Figure_2 etc).
- Please provide captions for all figures, images, and artwork.
- Text graphics may be embedded in the text at the appropriate position. If you are working with LaTeX, text graphics may also be embedded in the file.

Artwork formats

When your artwork is finalized, "save as" or convert your electronic artwork to the formats listed below taking into account the given resolution requirements for line drawings, halftones, and line/halftone combinations:

- Vector drawings: Save as EPS or PDF files embedding the font or saving the text as "graphics."
- Color or grayscale photographs (halftones): Save as TIFF, JPG or PNG files using a minimum of 300 dpi (for single column: min. 1063 pixels, full page width: 2244 pixels).
- Bitmapped line drawings: Save as TIFF, JPG or PNG files using a minimum of 1000 dpi (for single column: min. 3543 pixels, full page width: 7480 pixels).
- Combinations bitmapped line/halftones (color or grayscale): Save as TIFF, JPG or PNG files using a minimum of 500 dpi (for single column: min. 1772 pixels, full page width: 3740 pixels).

Please do not submit:

- files that are too low in resolution (for example, files optimized for screen use such as GIF, BMP, PICT or WPG files).
- disproportionately large images compared to font size, as text may become unreadable.

Figure captions

All images must have a caption. A caption should consist of a brief title (not displayed on the figure itself) and a description of the image. We advise you to keep the amount of text in any image to a minimum, though any symbols and abbreviations used should be explained.

Provide captions in a separate file.

Color artwork

If you submit usable color figures with your accepted article, we will ensure that they appear in color online.

Please ensure that color images are accessible to all, including those with impaired color vision. Learn more about [color and web accessibility](#).

For articles appearing in print, you will be sent information on costs to reproduce color in the printed version, after your accepted article has been sent to production. At this stage, please indicate if your preference is to have color only in the online version of your article or also in the printed version.

Generative AI and Figures, images and artwork

Please read our policy on the use of generative AI and AI-assisted tools in figures, images and artwork, which can be found in Elsevier's [GenAI Policies for Journals](#). This policy states:

- We do not permit the use of Generative AI or AI-assisted tools to create or alter images in submitted manuscripts.
- The only exception is if the use of AI or AI-assisted tools is part of the research design or methods (for example, in the field of biomedical imaging). If this is the case, such use must be described in a reproducible manner in the methods section, including the name of the model or tool, version and extension numbers, and manufacturer.
- The use of generative AI or AI-assisted tools in the production of artwork such as for graphical abstracts is not permitted. The use of generative AI in the production of cover art may in some cases be allowed, if the author obtains prior permission from the journal editor and publisher, can demonstrate that all necessary rights have been cleared for the use of the relevant material, and ensures that there is correct content attribution.

Supplementary material

We encourage the use of supplementary materials such as applications, images and sound clips to enhance research. Some guidelines:

- Cite all supplementary files in the manuscript text.
- Submit supplementary materials at the same time as your article. Be aware that all supplementary materials provided will appear online in the exact same file type as received. These files will not be formatted or typeset by the production team.
- Include a concise, descriptive caption for each supplementary file describing its content.
- Provide updated files if at any stage of the publication process you wish to make changes to submitted supplementary materials.
- Do not make annotations or corrections to a previous version of a supplementary file.
- Switch off the option to track changes in Microsoft Office files. If tracked changes are left on, they will appear in your published version.

We recommend you upload research data to a suitable specialist or generalist repository. Please read our guidelines on [sharing research data](#) for more information on depositing, sharing and using research data and other relevant research materials.

Video

This journal accepts video material and animation sequences to support and enhance your scientific research. We encourage you to include links to video or animation files within articles. Some guidelines:

- When including video or animation file links within your article, refer to the video or animation content by adding a note in your text where the file should be placed.
- Clearly label files ensuring the given file name is directly related to the file content.
- Provide files in one of our [recommended file formats](#). Files should be within our preferred maximum file size of 150 MB per file, 1 GB in total.
- Provide "stills" for each of your files. These will be used as standard icons to personalize the link to your video data. You can choose any frame from your video or animation or make a separate image.
- Provide text (for both the electronic and the print version) to be placed in the portions of your article that refer to the video content. This is essential text, as video and animation files cannot be embedded in the print version of the journal.

We publish all video and animation files supplied in the electronic version of your article.

For more detailed instructions, we recommend that you read our guidelines on [submitting video content to be included in the body of an article](#).

Research data

We are committed to supporting the storage of, access to and discovery of research data, and our [research data policy](#) sets out the principles guiding how we work with the research community to support a more efficient and transparent research process.

Research data refers to the results of observations or experimentation that validate research findings, which may also include software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Please read our guidelines on [sharing research data](#) for more information on depositing, sharing and using research data and other relevant research materials.

For this journal, the following instructions from our [research data guidelines](#) apply.

Option B: Research data deposit, citation and linking

You are **encouraged** to:

- Deposit your research data in a relevant data repository.
- Cite and link to this dataset in your article.
- If this is not possible, make a statement explaining why research data cannot be shared.

Data statement

To foster transparency, you are encouraged to state the availability of any data at submission.

Ensuring data is available may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you can state the reason why (e.g., your research data includes sensitive or confidential information such as patient data) during the submission process. This statement will appear with your published article on ScienceDirect.

Read more about the importance and benefits of providing a [data statement](#).

Data linking

Linking to the data underlying your work increases your exposure and may lead to new collaborations. It also provides readers with a better understanding of the described research.

If your research data has been made available in a data repository there are a number of ways your article can be linked directly to the dataset:

- Provide a link to your dataset when prompted during the online submission process.
- For some data repositories, a repository banner will automatically appear next to your published article on ScienceDirect.
- You can also link relevant data or entities within the text of your article through the use of identifiers. Use the following format: Database: 12345 (e.g. TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

Learn more about [linking research data and research articles in ScienceDirect](#).

Data in Brief and MethodsX: co-submission

You are encouraged to publish research **data**, **methods** or **protocols** related to your manuscript as a co-submission article in [Data in Brief](#) or [MethodsX](#). By publishing a co-submission, you further advance research reproducibility, interoperability, and open science. In case both your original research article and your co-submission article(s) get accepted for publication, they will be linked together on ScienceDirect.

When submitting your original research article, please follow the **co-submission process** active for this journal:

- Describe the research data, methods or protocols in a separate paper to be considered for publication in [Data in Brief](#) or in [MethodsX](#).
- Adhere to one of the following submission templates:
 - [Data article template](#) (*Data in Brief*)
 - [Methods article template](#) (*MethodsX*)
 - [Protocol article template](#) (*MethodsX*)
- Online submission of your co-submission article:
 - When you upload the files for your original research article, in the 'Attach Files' step in the Editorial Manager submission process, please also upload the file(s) for your co-submission.
 - Please select '[Data in Brief](#)' or '[MethodsX](#)' from the 'Select Item Type' drop-down menu when you upload your co-submission file(s).
 - Submit your co-submission file(s) as a Word document.

Article structure

Article sections

Divide your manuscript into clearly defined sections covering all essential elements using headings.

Glossary

Please provide definitions of field-specific terms used in your article, in a separate list.

Footnotes

We advise you to use footnotes sparingly. If you include footnotes in your article, ensure that they are numbered consecutively.

You may use system features that automatically build footnotes into text. Alternatively, you can indicate the position of footnotes within the text and present them in a separate section at the end of your article.

Acknowledgements

Include any individuals who provided you with help during your research, such as help with language, writing or proof reading, in the acknowledgements section. Acknowledgements should be placed in a separate section which appears directly before the reference list. Do not include acknowledgements on your title page, as a footnote to your title, or anywhere else in your article other than in the separate acknowledgements section.

Author contributions: CRediT

Corresponding authors are required to acknowledge co-author contributions using [CRediT \(Contributor Roles Taxonomy\)](#) roles:

- Conceptualization
- Data curation
- Formal analysis
- Funding acquisition
- Investigation
- Methodology
- Project administration
- Resources
- Software
- Supervision
- Validation
- Visualization
- Writing – original draft
- Writing – review and editing

Not all CRediT roles will apply to every manuscript and some authors may contribute through multiple roles.

We advise you to read [more about CRediT](#) and [view an example of a CRediT author statement](#).

Funding sources

Authors must disclose any funding sources who provided financial support for the conduct of the research and/or preparation of the article. The role of sponsors, if any, should be declared in relation to the study design, collection, analysis and interpretation of data, writing of the report and decision to submit the article for publication. If funding sources had no such involvement this should be stated in your submission.

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants, scholarships and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, it is recommended to include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Appendices

We ask you to use the following format for appendices:

- Identify individual appendices within your article using the format: A, B, etc.
- Give separate numbering to formulae and equations within appendices using formats such as Eq. (A.1), Eq. (A.2), etc. and in subsequent appendices, Eq. (B.1), Eq. (B.2) etc. In a similar way, give separate numbering to tables and figures using formats such as Table A.1; Fig. A.1, etc.

References

References within text

Any references cited within your article should also be present in your reference list and vice versa. Some guidelines:

- References cited in your abstract must be given in full.
- We recommend that you do not include unpublished results and personal communications in your reference list, though you may mention them in the text of your article.
- Any unpublished results and personal communications included in your reference list must follow the standard reference style of the journal. In substitution of the publication date add "unpublished results" or "personal communication."
- References cited as "in press" imply that the item has been accepted for publication.

Linking to cited sources will increase the discoverability of your research.

Before submission, check that all data provided in your reference list are correct, including any references which have been copied. Providing correct reference data allows us to link to abstracting and indexing services such as Scopus, Crossref and PubMed. Any incorrect surnames, journal or book titles, publication years or pagination within your references may prevent link creation.

We encourage the use of Digital Object Identifiers (DOIs) as reference links as they provide a permanent link to the electronic article referenced.

Reference style

All citations in the text should refer to:

- Single author: the author's name (without initials, unless there is ambiguity) and the year of publication.
- Two authors: both authors' names and the year of publication.
- Three or more authors: first author's name followed by 'et al.' and the year of publication.

Citations can be made directly (or parenthetically). Groups of references can be listed either first alphabetically, then chronologically, or vice versa. Examples: "as demonstrated (Allan, 2020a, 2020b; Allan and Jones, 2019)" or "as demonstrated (Jones, 2019; Allan, 2020). Kramer et al. (2023) have recently shown".

The list of references should be arranged alphabetically and then chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Abbreviate journal names according to the [List of Title Word Abbreviations](#) (LTWA).

Examples:

Reference to a journal publication:

Van der Geer, J., Handgraaf, T., Lupton, R.A., 2020. The art of writing a scientific article. *J. Sci. Commun.* 163, 51–59. <https://doi.org/10.1016/j.sc.2020.00372>.

Reference to a journal publication with an article number:

Van der Geer, J., Handgraaf, T., Lupton, R.A., 2022. The art of writing a scientific article. *Heliyon*. 19, e00205. <https://doi.org/10.1016/j.heliyon.2022.e00205>.

Reference to a book:

Strunk Jr., W., White, E.B., 2000. *The Elements of Style*, fourth ed. Longman, New York.

Reference to a chapter in a book:

Mettam, G.R., Adams, L.B., 2023. How to prepare an electronic version of your article, in: Jones, B.S., Smith, R.Z. (Eds.), *Introduction to the Electronic Age*. E-Publishing Inc., New York, pp. 281–304.

Reference to a website:

Cancer Research UK, 2023. Cancer statistics reports for the UK. <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/> (accessed 13 March 2023).

Reference to a dataset:

Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions [dataset]. Mendeley Data, v1. <https://doi.org/10.17632/xwj98nb39r1>.

Reference to software:

Coon, E., Berndt, M., Jan, A., Svyatsky, D., Atchley, A., Kikinzon, E., Harp, D., Manzini, G., Shelef, E., Lipnikov, K., Garimella, R., Xu, C., Moulton, D., Karra, S., Painter, S., Jafarov, E., & Molins, S., 2020. Advanced Terrestrial Simulator (ATS) v0.88 (Version 0.88) [software]. Zenodo. <https://doi.org/10.5281/zenodo.3727209>.

Web references

When listing web references, as a minimum you should provide the full URL and the date when the reference was last accessed. Additional information (e.g. DOI, author names, dates or reference to a source publication) should also be provided, if known.

You can list web references separately under a new heading directly after your reference list or include them in your reference list.

Data references

We encourage you to cite underlying or relevant datasets within article text and to list data references in the reference list.

When citing data references, you should include:

- author name(s)
- dataset title
- data repository
- version (where available)
- year
- global persistent identifier

Add [dataset] immediately before your reference. This will help us to properly identify the dataset. The [dataset] identifier will not appear in your published article.

Preprint references

We ask you to mark preprints clearly. You should include the word "preprint" or the name of the preprint server as part of your reference and provide the preprint DOI.

Where a preprint has subsequently become available as a peer-reviewed publication, use the formal publication as your reference.

If there are preprints that are central to your work or that cover crucial developments in the topic, but they are not yet formally published, you may reference the preprint.

Reference management software

Most Elsevier journals have their reference template available in popular reference management software products. These include products that support [Citation Style Language \(CSL\)](#) such as [Mendeley Reference Manager](#).

If you use a citation plug-in from these products, select the relevant journal template and all your citations and bibliographies will automatically be formatted in the journal style. We advise you to [remove all field codes](#) before submitting your manuscript to any reference management software product.

If a template is not available for this journal, follow the format given in examples in the reference style section of this Guide for Authors.

Submitting your manuscript**Submission checklist**

Before completing the submission of your manuscript, we advise you to read our submission checklist:

- One author has been designated as the corresponding author and their full contact details (email address, full postal address and phone numbers) have been provided.
- All files have been uploaded, including keywords, figure captions and tables (including a title, description and footnotes) included.
- Spelling and grammar checks have been carried out.
- All references in the article text are cited in the reference list and vice versa.
- Permission has been obtained for the use of any copyrighted material from other sources, including the Web.
- For gold open access articles, all authors understand that they are responsible for payment of the article publishing charge (APC) if the manuscript is accepted. Payment of the APC may be covered by the corresponding author's institution, or the research funder.

Suggest reviewers

To support the peer review process, we ask you to provide names and institutional email addresses of several potential reviewers for their manuscript. Some guidelines:

- Reviewers should not be colleagues or have co-authored or collaborated with you during the last three years.
- Do not suggest reviewers with whom you have competing interests.
- Suggest reviewers who are located in different countries or regions from yourself. This helps to provide a broad and balanced assessment of your work and to ensure scientific rigor.
- Consider diversity in your reviewer suggestions, such as gender, race and ethnicity and career stage.
- Do not suggest members of our Editorial Board.

The journal editors will take the final decision on whether to invite your suggested reviewers.

After receiving a final decision

Article Transfer Service

If your manuscript is more suitable for an alternative Elsevier journal, you may receive an email asking you to consider transferring your manuscript via the [Elsevier Article Transfer Service](#).

The recommendation could come from the journal editor, a dedicated [in-house scientific managing editor](#), a tool-assisted recommendation or a combination.

If you agree with the recommendation, your manuscript will be transferred and independently reviewed by the editors of the new journal. You will have the opportunity to make revisions, if necessary, before the submission is complete at the destination journal.

Publishing agreement

Authors will be asked to complete a publishing agreement after acceptance. The corresponding author will receive a link to the online agreement by email. We advise you to read [Elsevier's policies related to copyright](#) to learn more about our copyright policies and your, and your employer's/institution's, additional rights for subscription and gold open access articles.

License options

Authors will be offered [open access user license options](#) which will determine how you, and third parties, can reuse your gold open access article. We advise that you review these options and any funding body license requirements before selecting a license option.

Open access

We refer you to our [open access information page](#) to learn about open access options for this journal.

Permission for copyrighted works

If excerpts from other copyrighted works are included in your article, you must obtain written permission from the copyright owners and credit the source(s) within your article using [Elsevier's permission request and license form](#) (Word).

Proof correction

To ensure a fast publication process we will ask you to provide proof corrections within two days.

Corresponding authors will be sent an email which includes a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to Word. You can edit text, comment on figures and tables and answer questions raised by our copy editor. Our web-based proofing service ensures a faster and less error-prone process.

You can choose to annotate and upload your edits on the PDF version of your article, if preferred. We will provide you with proofing instructions and available alternative proofing methods in our email.

The purpose of the proof is to check the typesetting, editing, completeness and correctness of your article text, tables and figures. Significant changes to your article at the proofing stage will only be considered with approval of the journal editor.

Share Link

A customized [Share Link](#), providing 50 days free access to the final published version of your article on [ScienceDirect](#), will be sent by email to the corresponding author. The Share Link can be used to share your article on any communication channel, such as by email or on social media.

For an extra charge, you will be provided with the option to order paper offprints. A link to an offprint order form will be sent by email when your article is accepted for publication.

A Share Link will not be provided if your article is published gold open access. The final published version of your gold open access article will be openly available on ScienceDirect and can be shared through the article DOI link.

Responsible sharing

We encourage you to share and promote your article to give additional visibility to your work, enabling your paper to contribute to scientific progress and foster the exchange of scientific developments within your field. Read more about how to [responsibly share and promote your article](#).

Resources for authors

Elsevier Researcher Academy

If you would like help to improve your submission or navigate the publication process, support is available via [Elsevier Researcher Academy](#).

Elsevier Researcher Academy offers free e-learning modules, webinars, downloadable guides and research writing and peer review process resources.

Language and editing services

We recommend that you write in American or British English but not a combination of both.

If you feel the English language in your manuscript requires editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English, you may wish to use the [English Language Editing service](#) provided by Elsevier's Author Services.

Getting help and support

Author support

We recommend that you visit our [Journal Article Publishing Support Center](#) if you have questions about the editorial process or require technical support for your submission. Some popular FAQs:

- [How can I track the status of my submitted article?](#)
- [When will my article be published?](#)



All content on this site: Copyright © 2025 Elsevier B.V., its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the relevant licensing terms apply.

Appendix B

PRSIMA Checklist



Full reports

Section and Topic	#	Checklist Item*	Location
TITLE			
Title	1	Identify the report as a systematic review and include as applicable the following (in any order): outcome domain of interest, population of interest, name/type of OMs of interest, and measurement properties of interest.	p.19
ABSTRACT			
OPEN SCIENCE			
Funding ^b	2.2	Specify the primary source of funding for the review.	p.68
Registration	2.3	Provide the register name and registration number.	p. 24
BACKGROUND			
Objectives	2.4	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	p.23
METHODS			
Eligibility criteria	2.5	Specify the inclusion and exclusion criteria for the review.	p.25
Information sources	2.6	Specify the information sources (e.g., databases, registers) used to identify studies and the date when each was last searched.	p.24-25
Risk of bias	2.7	Specify the methods used to assess risk of bias in the included studies.	p.26
Measurement properties	2.8	Specify the methods used to rate the results of a measurement property.	p.26-27
Synthesis methods	2.9	Specify the methods used to present and synthesize results.	p.27
RESULTS			
Included studies	2.10	Give the total number of included OMs and study reports.	p.29
Synthesis of results	2.11	Present the syntheses of results of OMs, indicating the certainty of the evidence.	p.58-61
DISCUSSION			
Limitations of evidence	2.12	Provide a brief summary of the limitations of the evidence included in the review (e.g., study risk of bias, inconsistency, and imprecision).	p.66-67
Interpretation	2.13	Provide a general interpretation of the results and important implications.	p.62-68
PLAIN LANGUAGE SUMMARY			
Plain language summary	3	If allowed by the journal, provide a plain language summary with background information and key findings.	n/a
OPEN SCIENCE			
Registration and protocol	4a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	p.24
	4b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	p.24

Section and Topic	#	Checklist Item ^a	Location
	4c	Describe and explain any amendments to information provided at registration or in the protocol.	Appendix C
Support	5	Describe sources of financial or non-financial support for the review, and the role of the funders in the review.	p.68
Competing interests	6	Declare any competing interests of review authors.	p.68
Availability of data, code, and other materials	7	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	p.68
INTRODUCTION			
Rationale	8	Describe the rationale for the review in the context of existing knowledge.	p.21-23
Objectives	9	Provide an explicit statement of the objective(s) or question(s) the review addresses and include as applicable the following (in any order): outcome domain of interest, population of interest, name/type of OMIs of interest, and measurement properties of interest.	p.23
METHODS			
Followed guidelines	10	Specify, with references, the methodology and/or guidelines used to conduct the systematic review.	p.23-24
Eligibility criteria	11	Specify the inclusion and exclusion criteria for the review.	p.25
Information sources	12	Specify all databases, registers, preprint servers, websites, organizations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	p.24-25
Search strategy	13	Present the full search strategies for all databases, registers, and websites, including any filters and limits used.	Appendix D.
Selection process	14	Specify the methods used to decide whether a study met the inclusion criteria of the review, e.g., including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools/AI used in the process.	p.25
Data collection process	15	Specify the methods used to collect data from reports, e.g., including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools/AI used in the process.	p. 25-26
Data items	16	List and define which data were extracted (e.g., characteristics of study populations and OMIs, measurement properties' results, and aspects of feasibility and interpretability). Describe methods used to deal with any missing or unclear information.	p.26-27
Study risk of bias assessment	17	Specify the methods used to assess risk of bias in the included studies, e.g., including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools/AI used in the process.	p.26
Measurement properties	18	Specify the methods used to rate the results of a measurement property for each individual study and for the summarized or pooled results, e.g., including how many reviewers rated each study and whether they worked independently.	p.26-27
Synthesis methods	19a	Describe the processes used to decide which studies were eligible for each synthesis.	p.27
	19b	Describe any methods used to synthesize results.	p.27

Section and Topic	#	Checklist item ^a	Location
	19c	If applicable, describe any methods used to explore possible causes of inconsistency among study results (e.g., subgroup analysis).	p.27
	19d	If applicable, describe any sensitivity analyses conducted to assess robustness of the synthesized results.	n/a
Certainty assessment	20	Describe any methods used to assess certainty (or confidence) in the body of evidence.	p.27
Formulating recommendations	21	If appropriate, describe any methods used to formulate recommendations regarding the suitability of OMIs for a particular use.	p.62
RESULTS			
Study selection	22a	Describe the results of the search and selection process, from the number of records identified in the search to the number of study reports included in the review, ideally using a flow diagram. If applicable, also report the final number of OMIs included and the number of study reports relevant to each OMI. [T]	p.29
	22b	Cite study reports that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Appendix H
Omi characteristics	23a	Present characteristics of each included OMI, with appropriate references. [T]	p.32-33
	23b	If applicable, present interpretability aspects for each included OMI. [T]	n/a
	23c	If applicable, present feasibility aspects for each included OMI. [T]	n/a
Study characteristics	24	Cite each included study report evaluating one or more measurement properties and present its characteristics. [T]	p.34-53
Risk of bias in studies	25	Present assessments of risk of bias for each included study. [T]	Appendix I
Results of individual studies	26	For all measurement properties, present for each study: (a) the reported result and (b) the rating against quality criteria, ideally using structured tables or plots. [T]	p. Appendix I and Appendix L
Results of syntheses	27a	Present results of all syntheses conducted. For each measurement property of an OMI, present: (a) the summarized or pooled result and (b) the overall rating against quality criteria. [T]	p.58-61
	27b	If applicable, present results of all investigations of possible causes of inconsistency among study results.	n/a
	27c	If applicable, present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	n/a
Certainty of evidence	28	Present assessments of certainty (or confidence) in the body of evidence for each measurement property of an OMI assessed. [T]	p.58-61



Full reports

Section and Topic	#	Checklist Item ^a	Location
Recommendations	29	If appropriate, make recommendations for suitable OMs for a particular use.	p.62
DISCUSSION			
Discussion	30a	Provide a general interpretation of the results in the context of other evidence.	p.62-68
	30b	Discuss any limitations of the evidence included in the review.	p.66-67
	30c	Discuss any limitations of the review processes used.	p.66-67
	30d	Discuss implications of the results for practice, policy, and future research.	p.67-68

It is strongly recommended that this checklist is used in conjunction with the PRISMA-COSMIN for OMs 2024 Explanation and Elaboration (E&E) document for important clarification on the checklist items. The PRISMA-COSMIN for OMs 2024 statement checklist is distributed under the terms of the Creative Commons license.

^a If an item is marked with [T], a template for data visualization is available. These templates can be downloaded from www.prisma-cosmin.ca.

^b Item #2.1 in the PRISMA-COSMIN for OMs 2024 Abstracts checklist refers to the title. Item #2.1 in the Abstracts checklist is identical to item #1 in the Full Report checklist.

From: Elsmann EBM, Mokkink LB, Terwee CB, Beaton D, Gagnier JJ, Tricco AC, et al. Guideline for reporting systematic reviews of outcome measurement instruments (OMIs): PRISMA-COSMIN for OMs 2024. *Quality of Life Research* (2024), doi: <https://doi.org/10.1007/s11136-024-03634-y>.

Appendix C

Deviations from PROSPERO registration

Table 1C. *Table showing deviations from the original PROSPERO protocol and rationales*

Deviation	Rational
Reported in accordance to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) of outcome Measurement Instruments (OMIs) using consensus based standards for the selection of health measurement instruments (COSMIN) guidelines (Elsman et al., 2024) rather than the originally proposed PRISMA guidelines (Moher et al. 2009)	The PRISMA-OMI for COSMIN guidelines were more relevant, appropriate and updated reporting criteria hence were used instead for this review
Did not include a meta- analysis	Due to finding no content validity or evidence of the internal structure it left some of the data indeterminant. Therefore, it would not be appropriate or helpful to have applied a meta-analysis.

Appendix D

Full search strategy

1. ("Mini-SPIN" OR "Mini-Social Phobia Inventory" OR "Mini-SPIN-R" OR "MINI-SPIN")

PUBMED

((instrumentation[sh] OR methods[sh] OR "Validation Studies" OR "Comparative Study"[pt] OR "psychometrics"[MeSH] OR psychometr*[tiab] OR clinimetr*[tw] OR clinometr*[tw] OR "outcome assessment"[tiab] OR "outcome measure*[tw] OR "observer variation"[MeSH] OR "observer variation"[tiab] OR "Health Status Indicators"[Mesh] OR "reproducibility of results"[MeSH] OR reproducib*[tiab] OR "discriminant analysis"[MeSH] OR reliab*[tiab] OR unreliab*[tiab] OR valid*[tiab] OR "coefficient of variation"[tiab] OR coefficient[tiab] OR homogeneity[tiab] OR homogeneous[tiab] OR "internal consistency"[tiab] OR (cronbach*[tiab] AND (alpha[tiab] OR alphas[tiab])) OR (item[tiab] AND (correlation*[tiab] OR selection*[tiab] OR reduction*[tiab])) OR agreement[tw] OR precision[tw] OR imprecision[tw] OR "precise values"[tw] OR test-retest[tiab] OR (test[tiab] AND retest[tiab]) OR (reliab*[tiab] AND (test[tiab] OR retest[tiab])) OR stability[tiab] OR interrater[tiab] OR inter-rater[tiab] OR intrarater[tiab] OR intra-rater[tiab] OR intertester[tiab] OR inter-tester[tiab] OR intratester[tiab] OR intra-tester[tiab] OR interobserver[tiab] OR inter-observer[tiab] OR intraobserver[tiab] OR intra-observer[tiab] OR intertechnician[tiab] OR inter-technician[tiab] OR intratechnician[tiab] OR intra-technician[tiab] OR interexaminer[tiab] OR inter-examiner[tiab] OR intraexaminer[tiab] OR intra-examiner[tiab] OR interassay[tiab] OR inter-assay[tiab] OR intraassay[tiab] OR intra-assay[tiab] OR interindividual[tiab] OR inter-individual[tiab] OR intraindividual[tiab] OR intra-individual[tiab] OR interparticipant[tiab] OR inter-participant[tiab] OR intraparticipant[tiab] OR intra-participant[tiab] OR kappa[tiab] OR kappa's[tiab] OR kappas[tiab] OR repeatab*[tw] OR ((replicab*[tw] OR repeated[tw]) AND (measure[tw] OR measures[tw] OR findings[tw] OR result[tw] OR results[tw] OR test[tw] OR tests[tw])) OR generaliza*[tiab] OR generalisa*[tiab] OR concordance[tiab] OR (intraclass[tiab] AND correlation*[tiab]) OR discriminative[tiab] OR "known group"[tiab] OR "factor analysis"[tiab] OR "factor analyses"[tiab] OR "factor structure"[tiab] OR "factor structures"[tiab] OR dimension*[tiab] OR subscale*[tiab] OR (multitrait[tiab] AND scaling[tiab] AND (analysis[tiab] OR analyses[tiab])) OR "item discriminant"[tiab] OR "interscale correlation*[tiab] OR error[tiab] OR errors[tiab] OR "individual variability"[tiab] OR "interval variability"[tiab] OR "rate variability"[tiab] OR (variability[tiab] AND (analysis[tiab] OR values[tiab])) OR (uncertainty[tiab] AND (measurement[tiab] OR measuring[tiab])) OR "standard error of measurement"[tiab] OR sensitiv*[tiab] OR responsive*[tiab] OR (limit[tiab] AND detection[tiab]) OR "minimal detectable concentration"[tiab] OR interpretab*[tiab] OR ((minimal[tiab] OR minimally[tiab] OR clinical[tiab] OR clinically[tiab]) AND (important[tiab] OR significant[tiab] OR detectable[tiab]) AND (change[tiab] OR difference[tiab])) OR

(small*[tiab] AND (real[tiab] OR detectable[tiab]) AND (change[tiab] OR difference[tiab])) OR "meaningful change"[tiab] OR "ceiling effect"[tiab] OR "floor effect"[tiab] OR "Item response model"[tiab] OR IRT[tiab] OR Rasch[tiab] OR "Differential item functioning"[tiab] OR DIF[tiab] OR "computer adaptive testing"[tiab] OR "item bank"[tiab] OR "cross-cultural equivalence"[tiab]))

EBSCO Medline Ultimate

(instrumentation OR methods OR "Validation Studies" OR "Comparative Study" OR (MH "psychometrics") OR AB psychometr* OR clinimetr* OR clinometr* OR AB "outcome assessment" OR "outcome measure*" OR (MH "observer variation") OR AB "observer variation" OR (MH "Health Status Indicators") OR (MH "reproducibility of results") OR AB reproducib* OR (MH "discriminant analysis") OR AB reliab* OR AB unreliab* OR AB valid* OR AB "coefficient of variation" OR AB coefficient OR AB homogeneity OR AB homogeneous OR AB "internal consistency" OR (AB cronbach* AND (AB alpha OR AB alphas)) OR (AB item AND (AB correlation* OR AB selection* OR AB reduction*)) OR agreement OR precision OR imprecision OR "precise values" OR AB test-retest OR (AB test AND AB retest) OR (AB reliab* AND (AB test OR AB retest)) OR AB stability OR AB interrater OR AB inter-rater OR AB intrarater OR AB intra-rater OR AB intertester OR AB inter-tester OR AB intratester OR AB intra-tester OR AB interobserver OR AB inter-observer OR AB intraobserver OR AB intra-observer OR AB intertechnician OR AB inter-technician OR AB intratechnician OR AB intra-technician OR AB interexaminer OR AB inter-examiner OR AB intraexaminer OR AB intra-examiner OR AB interassay OR AB inter-assay OR AB intraassay OR AB intra-assay OR AB interindividual OR AB inter-individual OR AB intraindividual OR AB intra-individual OR AB interparticipant OR AB inter-participant OR AB intraparticipant OR AB intra-participant OR AB kappa OR AB kappa's OR AB kappas OR repeatab* OR ((replicab* OR repeated) AND (measure OR measures OR findings OR result* OR test OR tests)) OR AB generaliza* OR AB generalisa* OR AB concordance OR (AB intraclass AND AB correlation*) OR AB discriminative OR AB "known group" OR AB "factor analysis" OR AB "factor analyses" OR AB "factor structure" OR AB "factor structures" OR AB dimension* OR AB subscale* OR (AB multitrait AND AB scaling AND (AB analysis OR AB analyses)) OR AB "item discriminant" OR AB "interscale correlation*" OR AB error* OR AB "individual variability" OR AB "interval variability" OR AB "rate variability" OR (AB variability AND (AB analysis OR AB values)) OR (AB uncertainty AND (AB measurement OR AB measuring)) OR AB "standard error of measurement" OR AB sensitiv* OR AB responsive* OR (AB limit AND AB detection) OR AB "minimal detectable concentration" OR AB interpretab* OR ((AB minimal OR AB minimally OR AB clinical OR AB clinically) AND (AB important OR AB significant OR AB detectable) AND (AB change OR AB difference)) OR (AB small* AND (AB real OR AB detectable) AND (AB change OR AB difference)) OR AB "meaningful change" OR AB "ceiling effect" OR AB "floor effect" OR AB "Item response model" OR AB IRT OR AB Rasch OR AB "Differential item functioning" OR AB DIF OR AB "computer adaptive testing" OR AB "item bank" OR AB "cross-cultural equivalence")

EBSCO PsychINFO

(instrumentation OR methods OR "Validation Studies" OR "Comparative Study" OR (DE "psychometrics") OR psychometr* OR clinimetr* OR clinometr* OR "outcome assessment" OR "outcome measure*" OR "observer variation" OR (DE "test Reliability") OR reproducib* OR (DE "discriminant validity") OR reliab* OR unreliab* OR valid* OR "coefficient of variation" OR coefficient OR homogeneity OR homogeneous OR "internal consistency" OR (cronbach* AND (alpha OR alphas)) OR (item AND (correlation* OR selection* OR reduction*)) OR agreement OR precision OR imprecision OR "precise values" OR test-retest OR (test AND retest) OR (reliab* AND (test OR retest)) OR stability OR interrater OR inter-rater OR intrarater OR intra-rater OR intertester OR inter-tester OR intratester OR intra-tester OR interobserver OR inter-observer OR intraobserver OR intra-observer OR intertechnician OR inter-technician OR intratechnician OR intra-technician OR interexaminer OR inter-examiner OR intraexaminer OR intra-examiner OR interassay OR inter-assay OR intraassay OR intra-assay OR interindividual OR inter-individual OR intraindividual OR intra-individual OR interparticipant OR inter-participant OR intraparticipant OR intra-participant OR kappa OR kappa's OR kappas OR repeatab* OR ((replicab* OR repeated) AND (measure OR measures OR findings OR result* OR test OR tests)) OR generaliza* OR generalisa* OR concordance OR (intraclass AND correlation*) OR discriminative OR "known group" OR "factor analysis" OR "factor analyses" OR "factor structure" OR "factor structures" OR dimension* OR subscale* OR (multitrait AND scaling AND (analysis OR analyses)) OR "item discriminant" OR "interscale correlation*" OR error* OR "individual variability" OR "interval variability" OR "rate variability" OR (variability AND (analysis OR values)) OR (uncertainty AND (measurement OR measuring)) OR "standard error of measurement" OR sensitiv* OR responsive* OR (limit AND detection) OR "minimal detectable concentration" OR interpretab* OR ((minimal OR minimally OR clinical OR clinically) AND (important OR significant OR detectable) AND (change OR difference)) OR (small* AND (real OR detectable) AND (change OR difference)) OR "meaningful change" OR "ceiling effect" OR "floor effect" OR "Item response model" OR IRT OR Rasch OR "Differential item functioning" OR DIF OR "computer adaptive testing" OR "item bank" OR "cross-cultural equivalence") OR (DE "Measurement" OR DE "Measurement Models" OR DE "Psychophysical Measurement" OR DE "Statistical Measurement" OR DE "Testing") OR (DE "factor Analysis") OR (DE "factor structure") OR (DE "test construction") OR (DE "interrater Reliability") OR (DE "testing methods") OR (DE "statistical reliability") OR (DE "test construction")

EBSCO CINAHL

(MH "psychometrics") OR psychometr* OR clinimetr* OR clinometr* OR "outcome assessment" OR "outcome measure*" OR "observer variation" OR (MH "Health Status Indicators") OR (MH "Reliability+") OR (MH "Validity+") OR (MH "Reliability and Validity") OR (MH "Discriminant Validity") OR (MH "Criterion-Related Validity") OR (MH "Content Validity") OR (MH "Construct Validity") OR (MH "Test-Retest Reliability") OR (MH "Intrarater Reliability") OR (MH "Interrater Reliability") OR reproducib* OR reliab* OR unreliab* OR valid* OR "coefficient of variation" OR coefficient OR homogeneity OR homogeneous OR "internal consistency" OR (cronbach* AND (alpha OR alphas)) OR (item AND (correlation* OR selection* OR reduction*)) OR agreement OR precision OR imprecision OR "precise values" OR test-retest OR (test AND retest) OR (reliab* AND (test OR

retest)) OR stability OR interrater OR inter-rater OR intrarater OR intra-rater OR intertester OR inter-tester OR intratester OR intra-tester OR interobserver OR inter-observer OR intraobserver OR intra-observer OR intertechnician OR inter-technician OR intratechnician OR intra-technician OR interexaminer OR inter-examiner OR intraexaminer OR intra-examiner OR interassay OR inter-assay OR intraassay OR intra-assay OR interindividual OR inter-individual OR intraindividual OR intra-individual OR interparticipant OR inter-participant OR intraparticipant OR intra-participant OR kappa OR kappa's OR kappas OR repeatab* OR ((replicab* OR repeated) AND (measure OR measures OR findings OR result* OR test OR tests)) OR generaliza* OR generalisa* OR concordance OR (intraclass AND correlation*) OR discriminative OR "known group" OR "factor analysis" OR "factor analyses" OR "factor structure" OR "factor structures" OR dimension* OR subscale* OR (multitrait AND scaling AND (analysis OR analyses)) OR "item discriminant" OR "interscale correlation*" OR error* OR "individual variability" OR "interval variability" OR "rate variability" OR (variability AND (analysis OR values)) OR (uncertainty AND (measurement OR measuring)) OR "standard error of measurement" OR sensitiv* OR responsive* OR (limit AND detection) OR "minimal detectable concentration" OR interpretab* OR ((minimal OR minimally OR clinical OR clinically) AND (important OR significant OR detectable) AND (change OR difference)) OR (small* AND (real OR detectable) AND (change OR difference)) OR "meaningful change" OR "ceiling effect" OR "floor effect" OR "Item response model" OR IRT OR Rasch OR "Differential item functioning" OR DIF OR "computer adaptive testing" OR "item bank" OR "cross-cultural equivalence")

EBSCO Academic Search Ultimate

(instrumentation OR methods OR "Validation Studies" OR "Comparative Study" OR psychometr* OR clinimetr* OR clinometr* OR "outcome assessment" OR "outcome measure*" OR "observer variation" OR ("test Reliability") OR reproducib* OR (DE "discriminant validity") OR reliab* OR unreliab* OR valid* OR "coefficient of variation" OR coefficient OR homogeneity OR homogeneous OR "internal consistency" OR (cronbach* AND (alpha OR alphas)) OR (item AND (correlation* OR selection* OR reduction*)) OR agreement OR precision OR imprecision OR "precise values" OR test-retest OR (test AND retest) OR (reliab* AND (test OR retest)) OR stability OR interrater OR inter-rater OR intrarater OR intra-rater OR intertester OR inter-tester OR intratester OR intra-tester OR interobserver OR inter-observer OR intraobserver OR intra-observer OR intertechnician OR inter-technician OR intratechnician OR intra-technician OR interexaminer OR inter-examiner OR intraexaminer OR intra-examiner OR interassay OR inter-assay OR intraassay OR intra-assay OR interindividual OR inter-individual OR intraindividual OR intra-individual OR interparticipant OR inter-participant OR intraparticipant OR intra-participant OR kappa OR kappa's OR kappas OR repeatab* OR ((replicab* OR repeated) AND (measure OR measures OR findings OR result* OR test OR tests)) OR generaliza* OR generalisa* OR concordance OR (intraclass AND correlation*) OR discriminative OR "known group" OR "factor analysis" OR "factor analyses" OR "factor structure" OR "factor structures" OR dimension* OR subscale* OR (multitrait AND scaling AND (analysis OR analyses)) OR "item discriminant" OR "interscale correlation*" OR error* OR "individual variability" OR "interval variability" OR "rate variability" OR (variability AND (analysis OR values)) OR (uncertainty AND (measurement OR measuring)) OR "standard error of measurement" OR sensitive* OR responsive* OR (limit AND detection) OR "minimal detectable concentration"

OR interpretab*OR ((minimal OR minimally OR clinical OR clinically) AND (important OR significant OR detectable) AND (change OR difference)) OR (small* AND (real OR detectable) AND (change OR difference)) OR “meaningful change” OR “ceiling effect” OR “floor effect” OR “Item response model” OR IRT OR Rasch OR “Differential item functioning” OR DIF OR “computer adaptive testing” OR “item bank” OR “cross-cultural equivalence”) OR (DE "Measurement") OR (DE "factor Analysis") OR (DE “factor structure) OR (DE “test design”) OR (DE “INTER-observer Reliability”) OR (DE “statistical reliability)

Web of science

TS=(instrumentation OR methods)

TS=(“validation study” OR “comparative study”)

TS=(Psychometrics)

(TI=(psychometr*)) OR AB=(psychometr*)

TS=(clinimetr* OR clinometr*)

TS=(“Outcome Assessment, Health Care”)

(TI=(“outcome assessment”)) OR AB=(“outcome assessment”)

TS=(“outcome measure”)

TS=(“Observer Variation”)

TI=(“observer variation”) OR AB=(“observer variation”)

TS=(“Health Status Indicators”)

TS=(“Reproducibility of Results”)

(TI=(reproducib*)) OR AB=(reproducib*)

TS=(“Discriminant Analysis”)

(TI=((reliab* OR unreliab* OR valid* OR “coefficient of variation” OR coefficient OR homogeneity OR homogeneous OR “internal consistency”))) OR AB=((reliab* OR unreliab* OR valid* OR “coefficient of variation” OR coefficient OR homogeneity OR homogeneous OR “internal consistency”))

(TI=((cronbach* AND (alpha OR alphas)))) OR AB=((cronbach* AND (alpha OR alphas)))

(TI=((item AND (correlation* OR selection* OR reduction*)))) OR AB=((item AND (correlation* OR selection* OR reduction*)))

TS=(agreement)

TS=(precision)

TS=(imprecision)

TS=(“precise values”)

(TI=(test-retest)) OR AB=(test-retest)

(TI=((test AND retest))) OR AB=((test AND retest))

(TI=((reliab* AND (test OR retest)))) OR AB=((reliab* AND (test OR retest)))

(TI=(stability)) OR AB=(stability)

(TI=((interrater OR inter-rater OR intrarater OR intra-rater))) OR AB=((interrater OR inter-rater OR intrarater OR intra-rater))

(TI=((intertester OR inter-tester OR intratester OR intra-tester))) OR AB=((intertester OR inter-tester OR intratester OR intra-tester))

(TI=((interobserver OR inter-observer OR intraobserver OR intra-observer))) OR AB=((interobserver OR inter-observer OR intraobserver OR intra-observer))

(TI=((intertechnician OR inter-technician OR intratechnician OR intra-technician))) OR AB=((intertechnician OR inter-technician OR intratechnician OR intra-technician))

(TI=((interexaminer OR inter-examiner OR intraexaminer OR intra-examiner))) OR AB=((interexaminer OR inter-examiner OR intraexaminer OR intra-examiner))

(TI=((interassay OR inter-assay OR intraassay OR intra-assay))) OR AB=((interassay OR inter-assay OR intraassay OR intra-assay))

(TI=((interindividual OR inter-individual OR intraindividual OR intra-individual))) OR AB=((interindividual OR inter-individual OR intraindividual OR intra-individual))

(TI=((interparticipant OR inter-participant OR intraparticipant OR intra-participant))) OR AB=((interparticipant OR inter-participant OR intraparticipant OR intra-participant))

(TI=(kappa)) OR AB=(kappa)

(TI=(kappas)) OR AB=(kappas)

TS=(repeatab*)

TS=(((replicab* OR repeated) AND (measure OR measures OR findings OR result OR results OR test OR tests)))

(TI=((generaliza* OR generalisa*))) OR AB=((generaliza* OR generalisa*))

(TI=(concordance)) OR AB=(concordance)

(TI=((intraclass AND correlation*))) OR AB=((intraclass AND correlation*))

(TI=(discriminative)) OR AB=(discriminative)

(TI=("known group")) OR AB=("known group")

(TI=((("factor analysis" OR "factor analyses" OR "factor structure" OR "factor structures")))) OR AB=((("factor analysis" OR "factor analyses" OR "factor structure" OR "factor structures")))

(TI=(dimension*)) OR AB=(dimension*)

(TI=(subscale*)) OR AB=(subscale*)

(TI=((multitrait AND scaling AND (analysis OR analyses)))) OR AB=((multitrait AND scaling AND (analysis OR analyses)))

(TI=("item discriminant")) OR AB=("item discriminant")

(TI=("interscale correlation*")) OR AB=("interscale correlation*")

(TI=((error OR errors))) OR AB=((error OR errors))

(TI=("individual variability")) OR AB=("individual variability")

(TI=("interval variability")) OR AB=("interval variability")

(TI=("rate variability")) OR AB=("rate variability")

(TI=((variability AND (analysis OR values)))) OR AB=((variability AND (analysis OR values)))

(TI=((uncertainty AND (measurement OR measuring)))) OR AB=((uncertainty AND (measurement OR measuring)))

(TI=("standard error of measurement")) OR AB=("standard error of measurement")

(TI=(sensitiv*)) OR AB=(sensitiv*)

(TI=(responsive*)) OR AB=(responsive*)

(TI=((limit AND detection))) OR AB=((limit AND detection))

(TI=(“minimal detectable concentration”)) OR AB=(“minimal detectable concentration”)

(TI=(interpretab*)) OR AB=(interpretab*)

(TI=((((minimal OR minimally OR clinical OR clinically) AND (important OR significant OR detectable) AND (change OR difference)))) OR AB=((((minimal OR minimally OR clinical OR clinically) AND (important OR significant OR detectable) AND (change OR difference))))

(TI=((small* AND (real OR detectable) AND (change OR difference)))) OR AB=((small* AND (real OR detectable) AND (change OR difference))))

(TI=(“meaningful change”)) OR AB=(“meaningful change”)

(TI=(“ceiling effect”)) OR AB=(“ceiling effect”)

(TI=(“floor effect”)) OR AB=(“floor effect”)

(TI=(“item response model”)) OR AB=(“item response model”)

(TI=(IRT)) OR AB=(IRT)

(TI=(rasch)) OR AB=(rasch)

(TI=(“differential item functioning”)) OR AB=(“differential item functioning”)

(TI=(DIF)) OR AB=(DIF)

(TI=(“computer adaptive testing”)) OR AB=(“computer adaptive testing”)

(TI=(“item bank”)) OR AB=(“item bank”)

(TI=(“cross-cultural equivalence”)) OR AB=(“cross-cultural equivalence”)

Appendix E

COSMIN criteria for good measurement properties and COSMIN definitions of measurement properties.

Information below has been taken from COSMIN manual (Mokkink et al., 2024).

Figure 1E

Figure showing COSMIN criteria for each measurement property

Measurement property	Rating	Criteria
Content validity	+	Included items are relevant for the construct, target population, and context of use, and response options and recall period are appropriate <i>AND</i> No key concepts are missing <i>AND</i> PROM items and response options are appropriately worded and PROM instructions, items and response options understood by the population of interest as intended
	?	Not enough information reported
	-	Included items are not relevant for the construct or target population <i>OR</i> Key concepts are missing <i>OR</i> PROM items and response options are not appropriately worded or not understood by the population of interest as intended
Structural validity	+	CTT: EFA/PCA: factor loadings of each item on its factor ≥ 0.30 <i>AND</i> Maximum 10% of the items have factor loadings ≥ 0.30 on multiple factors <i>AND</i> Explained variance $\geq 50\%$ and structure is in line with the theory about the construct to be measured <i>OR</i> results on scree plot or Kaiser criterion (Eigenvalues > 1) are in line with the theory about the construct to be measured CFA: CFI or TLI or comparable measure > 0.95 <i>OR</i> RMSEA < 0.06 <i>OR</i> SRMR < 0.08 IRT/Rasch: No violation of <u>unidimensionality</u>: CFI or TLI or comparable measure > 0.95 <i>OR</i> RMSEA < 0.06 <i>OR</i> SRMR < 0.08 <i>AND</i> No violation of <u>local independence</u>: residual correlations among the items after controlling for dominant factor < 0.20 <i>OR</i> Q3s < 0.37 <i>AND</i> No violation of <u>monotonicity</u>: adequate looking graphs <i>OR</i> item scalability > 0.30 <i>AND</i> Adequate <u>model fit</u>: IRT: $\chi^2 > 0.01$ Rasch: infit and outfit mean squares ≥ 0.5 and ≤ 1.5 <i>OR</i> Z-standardized values > -2 and < 2

	?	Not enough information reported
	-	Criteria for '+' not met
Internal consistency	+	At least low evidence for sufficient unidimensionality <i>AND</i> Cronbach's alpha ≥ 0.70
	?	Criteria for "at least low evidence for sufficient unidimensionality" not met <i>OR</i> Evidence for insufficient unidimensionality <i>OR</i> Not enough information reported
	-	At least low quality evidence for sufficient unidimensionality <i>AND</i> Cronbach's alpha < 0.70
Cross-cultural validity\ measurement invariance	+	No important differences found between group factors (such as age, gender, language) in multiple group factor analysis <i>OR</i> no important DIF for group factors (McFadden's $R^2 < 0.02$)
	?	Not enough information reported
	-	Important differences between group factors <i>OR</i> DIF was found
Reliability	+	ICC or (weighted) kappa or Pearson/Spearman correlation ≥ 0.70
	?	Not enough information reported
	-	ICC or (weighted) kappa or Pearson/Spearman correlation < 0.70
Measurement error	+	SDC or LoA $< MIC$
	?	MIC not defined <i>OR</i> not enough information reported
	-	SDC or LoA $> MIC$
Criterion validity	+	Correlation with gold standard ≥ 0.70 <i>OR</i> AUC ≥ 0.70
	?	Not enough information reported
	-	Correlation with gold standard < 0.70 <i>OR</i> AUC < 0.70
Hypotheses testing for construct validity	+	$\geq 75\%$ of the results is in accordance with predefined hypotheses
	?	No relevant results were found
	-	$\geq 75\%$ of the results deviates from predefined hypotheses
Responsiveness	+	$\geq 75\%$ of the results is in accordance with predefined hypotheses <i>OR</i> AUC ≥ 0.70
	?	No relevant results were found
	-	$\geq 75\%$ of the results deviates from predefined hypotheses <i>OR</i> AUC < 0.70

Note. AUC = area under the receiver operator characteristic (ROC) curve, CFA = confirmatory factor analysis, CFI = comparative fit index, CTT = classical test theory, DIF = differential item functioning, EFA = exploratory factor analysis, ICC = intraclass correlation coefficient, IRT = item response theory, LoA = limits of agreement, MIC = minimal important change, PCA = principal component analyses, RMSEA: Root Mean Square Error of Approximation, SEM = Standard Error of Measurement, SDC = smallest detectable change, SRMR: Standardized Root Mean Residuals, TLI = Tucker-Lewis index" (Mokkink et al., 2024)

Figure 2E

Figure retrieved from COSMIN manual (Mokkink et al., 2024) showing COSMIN definitions for each measurement property

Domains	Definitions
Reliability	“The degree to which the measurement is free from measurement error” “The extent to which scores for patients who have not changed are the same for repeated measurement under several conditions: e.g. using different sets of items from the same PROM (internal consistency); over time (test-retest); by different persons on the same occasion (inter-rater); or by the same persons (i.e. raters or responders) on different occasions (intra-rater)” (Mokkink et al., 2024, p.12).
Validity Construct validity	“The degree to which a PROM measures the construct(s) it purports to measure” “The degree to which the scores of a PROM are consistent with hypotheses (for instance with regard to internal relationships, relationships to scores of other instruments, or differences between relevant groups) based on the assumption that the PROM validly measures the construct to be measured” (Mokkink et al., 2024, p.12).
Measurement properties	
Content validity	“The degree to which the content of a PROM is an adequate reflection of the construct to be measured” (Mokkink et al., 2024, p.12).

Structural validity	“The degree to which the scores of a PROM are an adequate reflection of the dimensionality of the construct to be measured” (Mokkink et al., 2024, p.12).
Internal consistency	“The degree of the interrelatedness among the items” (Mokkink et al., 2024, p.12).
Cross- Cultural validity	“The degree to which the performance of the items on a translated or culturally adapted PROM are an adequate reflection of the performance of the items of the original version of the PROM” (Mokkink et al., 2024, p.12).
Reliability	“The proportion of the total variance in the measurements which is due to ‘true’ differences between patients” (Mokkink et al., 2024, p.12).
Measurement error	“The systematic and random error of a patient’s score that is not attributed to true changes in the construct to be measured” (Mokkink et al., 2024, p.12).
Criterion Validity	“The degree to which the scores of a PROM are an adequate reflection of a ‘gold standard’” (Mokkink et al., 2024, p.13).
Hypotheses testing for construct validity	“The degree to which the scores of a PROM are consistent with hypotheses (with regard to relationships to scores of other instruments, or differences between relevant groups) based on the assumption that the PROM validly measures the construct to be measured” (Mokkink et al., 2024, p.13).
Responsiveness	“The ability of a PROM to detect change over time in the construct to be measured” (Mokkink et al., 2024, p.13).

Note. PROM=patient reported outcome measure

Appendix F

Prior hypothesis set for construct validity and responsiveness with rationales

Table 1F.

Pre-determined hypothesis for construct validity with rationales

Hypotheses for construct validity		Rational
Hypotheses 1	The Mini-SPIN will have a strong positive correlation with other established social anxiety measures ($r \geq 0.70$)	Mini-SPIN is expected to have high correlations with other social anxiety measures as they are assessing the same construct.
Hypotheses 2	The Mini-SPIN will have weak positive correlations with measures of unrelated constructs i.e. (depression, quality of life) ($r \leq 0.30$)	The Mini-SPIN is expected to have weak correlations with depression measures due to both being distinctly different constructs. However, there may be some small correlations due to both being internalising conditions with high co-morbidity.
Hypotheses 3	The Mini-SPIN will have moderate positive correlations with established general anxiety measures and measures of general	The mini-SPIN is expected to have positive correlations with other established anxiety measures and general measures of psychological/ emotional distress due to

emotional/psychological distress such as K-10 ($r=0.30-0.5$)

containing similar underlying constructs, however, is not expected to correlate strongly due to being distinct constructs.

Table 2F

Pre-determined hypotheses for responsiveness with rationales

Hypotheses for responsiveness	Rational
Hypotheses 1	The change in scores from pre- post treatment on the mini-SPIN will correlate positively with change in scores of other established social anxiety measures ($r \geq 0.5$) The Mini-SPIN is expected to be able to correlate positively with other measures when assessing sensitivity/ responsiveness to change in treatment as they are both assessing change in the same construct.
Hypotheses 2	The Mini-SPIN will show a moderate to large effect size after Cognitive Behavioural Therapy $d \geq 0.5$ CBT is an evidenced based treatment (NICE, 2013) and is a recognised and known effective treatment of social anxiety (Kindredm et al., 2022) therefore, we would expect at least a moderate effect to be captured by the MINI SPIN

Hypotheses 3

After a CBT intervention, participants will show a statistically significant reduction in Mini-SPIN scores, defined as exceeding the MCID.

Our rationale and methods for determining the Minimally Clinically important difference/ change score (MCID) of the Mini-SPIN scores in this review is grounded in distribution-based methods (Wright et al., 2012). To our knowledge there are no existing studies establishing a Minimal Clinically Important Difference (MCID) for the Mini-SPIN, therefore, we devised our own thresholds based upon standards and methods of previous literature (Sedaghat, 2019; Wright et al., 2012; Franceschini et al., 2023). We also ensured that the MCID for the Mini -SPIN was context dependent and specific to the studies included in this review (Wright et al., 2012). For comparability and standardisation, we deployed one consistent approach across all studies therefore, if it was not possible to calculate the MCID it was not possible to assess whether the study met this hypothesis of responsiveness. To determine

Hypotheses 4

The mini-SPIN will demonstrate a large effect size >0.5 / greater reduction in scores after treatment than compared to waitlist group which will have a small effect size <0.3

the responsiveness of the Mini-SPIN we followed previous established methods for calculating MCID in PROMS (Sedaghat, 2019; Norman et al., 2003). This included calculating the MCID, initially by working out the standard error of measurement (SEM) through baseline standard deviations and test-retest scores. Test -retest scores were used here as this metric assessed the stability of scores over time (Schmidt et al., 2003), therefore, is a more appropriate metric when assessing MCID (Sedaghat, 2019). Following the SEM, MCID was calculated as $1 \times \text{SEM}$ (Sedaghat, 2019; Wyrwich et al., 1999).

We would expect that after an evidence-based treatment a reduction in scores on the Mini-SPIN whereas, following a waitlist group where no intervention was conducted, we wouldn't expect there to be much change in scores on the Mini-SPIN

Appendix G

Table for determining GRADE and downgrading based on Risk of Bias, imprecision, inconsistency and indirectness

Table 1G

Table retrieved from Elsmann et al (2022) showing GRADE factor and what to downgrade

Grade factor	Downgrading	Definition
Risk of bias	0	Multiple studies of at least adequate quality <i>OR</i> one study of very good quality
	-1	Only one study of adequate quality <i>OR</i> multiple studies of doubtful quality
	-2	Only one study of doubtful quality <i>OR</i> multiple studies of inadequate quality
	-3	Only one study of inadequate quality
Imprecision (not for content validity, structural validity, and cross-cultural validity\ measurement invariance)	0	Total sample size of all studies >100
	-1	Total sample size of all studies 50-100
	-2	Total sample size of all studies <50
Inconsistency	0	Results are consistent <i>OR</i> results are summarized and rated per subset of studies, and subsequently graded
	-1	Overall rating based on the majority of consistent results
Indirectness	0	Does not occur; definitions for construct and/or target population have been stated in the inclusion criteria

0: high, -1: moderate, -2: low, -3: very low; Per protocol of the COSMIN guideline for systematic reviews: the quality of evidence for internal consistency cannot be higher than the quality of evidence for structural validity[23]

Appendix H

Studies excluded and rationales

Table 1H

Studies excluded during citation searching despite meeting criteria

Study excluded despite meeting criteria	Rational
D'El Rey, G. J. F., Lacava, J. P. L., & Cardoso, R. (2007). Internal consistency of the Portuguese version of the Mini-Social Phobia Inventory (Mini-SPIN). <i>Archives of Clinical Psychiatry</i> , 34(6), 266-269.	Not accessible in English
Levine, D. S., Himle, J. A., Vlnka, S., Steinberger, E., Laviolette, W., & Bybee, D. (2013). Effectiveness of the Mini-Social Phobia Inventory (Mini-SPIN) as a screener for social anxiety disorder in a low-income, job-seeking sample.	Under review (not accessible)
Ek, A., & Östlund, P. (2013). Internet Validation and Psychometric Evaluation of the Mini-Social Phobia Inventory (Mini-SPIN) Applied to One Clinical and Two Nonclinical Samples.	Not peer reviewed

Table 2H

Studies excluded at full text with rationales

Excluded at full text	Rational
Sosic-Vasic, Z., Wolf, R. C., Wolf, N. D., & Vasic, N. (2011). Diagnostics of social phobia-significance and practicability of psychometric diagnostic devices. <i>NERVENHEILKUNDE</i> , 30(8), 594-601.	Not in English

- Osorio, F. D. L., Crippa, J. A., & Loureiro, S. R. (2010). Social anxiety disorder: studies of instrument validation for the Brazilian context. *SALUD I CIENCIA, 17*(6), 533-536. Not in English
- Poeder, K., Fisk, J. D., Campbell, T. L., Stadnyk, K., Ghatavi, K., Kisely, S. R., ... & Bhan, V. (2007). Prevalence of social anxiety in an MS population: sensitivity and specificity of the Mini-SPIN in documenting self-reported symptoms. *Multiple Sclerosis, 13*, S122-S123. Not peer reviewed
- Beesdo-Baum, K., Klotsche, J., Knappe, S., Craske, M. G., LeBeau, R. T., Hoyer, J., ... & Wittchen, H. U. (2012). Psychometric properties of the dimensional anxiety scales for DSM-V in an unselected sample of German treatment seeking patients. *Depression and anxiety, 29*(12), 1014-1024. Mini-SPIN used in the development of another measure, no assessment of the psychometrics of the Mini-SPIN
- D'El Rey, G. J. F., & Matos, C. W. (2009). Validation of the portuguese version of the Mini-Social Phobia Inventory (Mini-SPIN). *Ciência & Saúde Coletiva, 14*(5), 1681. Not in English

Appendix I

Risk of Bias and demographic information for included studies

Table 1I

Included studies per psychometric property, with demographic information, risk of bias and rationales

Psychometric property	Reference	OMI	Country/ Language/ setting and study type	Demographic characteristics patients		Sample size	Risk of Bias rating	Rational
				Mean (SD) age	Percentage male/female			
Structural validity								
	Batterham et al (2017)	Mini-SPIN	Australia (English) Control trial online	25.4(3.4)	24/76	1687	VG	Met all COSMIN criteria. However, was not possible to rate on good measurement properties due to poor reporting of results and lack of clarity in

							the study impairing ability to interpret results
Dahl, A and Dahl, C (2010)	Norwegian version	Norway (Norwegian) the Oslo Health study HUBRO study	Not reported	43.74% male, 56.26% female	9523	D	Only did PCA no EFA or CFA was performed
Olsson and Dahl (2012)	Norwegian version	Norway (Norwegian) the Oslo Health study HUBRO study	Not reported	Not reported	1400	D	Only did PCA no EFA or CFA was performed
Dahl, A and Dahl, A (2010)	Norwegian version	Norway (Norwegian) the Oslo Health study HUBRO study	Not reported	42/58	2230	D	Only did PCA no EFA or CFA was performed

Internal consistency								
	Seeley-Wait et al (2009)	Mini-SPIN	Australia (English), Macquarie University Anxiety Research Unit. Cross-sectional	Clinical group 34.6 (10.0)	Clinical group 49/51	242	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
	Pre: Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4 randomised control trials on the efficacy of internet	43 (11.38)	28.8/71.2	993	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		delivered treatment.					
Post: Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4 randomised control trials on the efficacy of internet delivered treatment. Cross sectional.	Total population: 43 (11.38)	Total population: 28.8/71.2	830	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
3 Months: Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4	Total population: 43 (11.38)	Total population: 28.8/71.2	811	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		randomised control trials on the efficacy of internet delivered treatment. Cross sectional.					
Le Blanc et al (2014)	Mini-SPIN	United States (English) seeking treatment groups	SAD: 32.32 non SAD 31.43 SD not reported	SAD sample 56.6/42.5/0.9 missing. Non SAD Sample 45.3/54.7	521 SAD=435 Non- SAD=86	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Sunderland et al (2018)	Mini-SPIN	Australia Single group equating design.	Not reported	Sample 1: 20.4/79.6 Sample 2: 19.8/77.3	1052	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Child pre-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	9.29 (2.1)	52.2/47.8	695	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Child post-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	9.29 (2.1)	Not reported	170	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Child 6-month post treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	9.29 (2.1)	Not reported	154	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Caregiver pre-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	42.6(5)	9.1/90.9	703	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Caregiver post-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	42.6(5)	Not reported	177	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Caregiver 6 months post-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	42.6(5)	Not reported	157	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Middle childhood: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	8.66(1.4)	51.5/48.5	544	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Early adolescence: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	13.11(1.3)	56/44	91	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Batterham et al (2017)	Mini-SPIN	Australia Online control trial	25.4(3.4)	24/76	1687	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Gordon and Heimberg (2011)	Mini-SPIN	United States. Adult Anxiety	33.21(12.32)	44/56	129	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		Clinic at Temple					
Total Sample: Weeks et al (2007)	Mini-SPIN	United states. Treatment seeking sample who called adult anxiety clinic of temple seeking treatment	Pre- treatment: 29.3 (11.41) Nonclinical: 34.29(11.53)	Pretreatment: 48.1/51.9 Nonclinical: 44.4/55.6	291	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Pre-treatment: Weeks et al (2007)	Mini-SPIN	United states. Treatment seeking sample who called adult anxiety clinic of	29.3 (11.41)	48.1/51.9	135	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		temple seeking treatment					
Baseline: Mewton et al (2014)	Mini-SPIN	Patient Safety and Quality Unit at St. Vincent's Hospital, Sydney	40.8(13.8)	39/61	635	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Pre-treatment: Mewton et al (2014)	Mini-SPIN	Patient Safety and Quality Unit at St. Vincent's Hospital, Sydney	Not reported	Not reported	307	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Aderka et al (2013)	Mini-SPIN	Treatment trial	33.78(12.18)	62.12%/37.88%	569	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Aderka et al (2013)	Mini-SPIN -R	Treatment trial	33.78(12.18)	62.12%/37.88%	569	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Study one: Wiltink et al (2017)	German version	Germany (German) University Medical Centre	38.5 (SD 13.2)	39/ 61	1254	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Study two: Wiltink et al (2017)	German version	Germany (German) Community sample	48.8 (SD 18.2)	46/ 54	1274	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Mörtberg and Jansson Fröjmark (2019)	Swedish version of the Mini- SPIN	Sweden (Swedish) university of Stockholm	27.7 (7.5)	24/76	161	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Dahl, A and Dahl, C. (2010)	Norwegian version	Norway (Norwegian) the Oslo Health study	Not reported	43.74% male, 56.26% female	9523	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		HUBRO study					
Olssøn and Dahl (2012)	Norwegian version	Norway (Norwegian) the Oslo Health study HUBRO study	Not reported	Not reported	1400	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Dahl and Olssøn (2013)	Norwegian version	Norway (Norwegian) the Oslo Health study HUBRO study	Not reported	Not reported	2710	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Dahl. C and Dahl. A (2010)	Norwegian version	Norway (Norwegian) the Oslo Health study HUBRO study	Not reported	42/58	2230	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Study one: Garcia-Lopez and Moore (2015)	Spanish version	Spanish schools	15.04 (1.33)	53.4/46.6	573	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Study two Total: Garcia- Lopez and Moore (2015)	Spanish version	Spanish schools	Not reported	Not reported	354	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Study two clinical sample: Garcia-Lopez and Moore (2015)	Spanish version	Spanish schools	15.37 (1.17)	37.4/62.6	147	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Study two: healthy controls Garcia-Lopez and Moore (2015).	Spanish version	Spanish schools	15.34 (1.23)	54.6/45.4	207	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
University Students:	Portuguese version	Brazil, university.	Total 21.41(3.3)	Total sample 44.2/55.8	2314	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Osório et al
(2010)

Clinical Sample: Osório et al (2010).	Portuguese version	Brazil	21.2 (2.7)	38.2/61.8	178	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Nonclinical Sample: Osório et al (2010)	Portuguese version	Brazil	Not reported	Not reported	90	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Cross cultural validity/ measurement invariance

Study two: Wiltink, et al (2017)	German version	Germany (German) Community sample	48.8 (SD 18.2)	46/ 54	1274	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
--	-------------------	--	-------------------	--------	------	----	--

Reliability

Seeley-Wait et al. (2009)	Mini-SPIN	Australia (English), Macquarie University	Not reported	Not reported	26	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
------------------------------	-----------	--	--------------	--------------	----	----	--

		Anxiety Research Unit. Cross- sectional					
Pretreatment: Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4 randomised control trials on the efficacy of internet delivered treatment.	43 (11.38)	28.8/71.2	993	D	stated re-test in 1-4 weeks we agreed that this could potentially introduce some bias, as it was not clear that all P's were re-tested with the same time interval. Additionally, a one-week gap could introduce some recall bias. Hence was rated D due to lack of clarity/ inconsistency in time interval 1-4 weeks is a big difference and possible recall bias at 1 week.
Study one: Wiltink et al (2017)	German version of	Germany (German) University	38.5 (SD 13.2)	39/61	1254	I	Patients were not stable on the construct in the time between the repeated

the Mini-
SPIN Medical
 Centre

measures and there was
doubt over the consistency
of test conditions between
the repeated measures.
Additionally, no interclass
correlation was calculated.

Criterion validity								
Seeley-Wait et al (2009)	Mini-SPIN	Australia (English), Macquarie University Anxiety Research Unit. Cross-sectional	Clinical group 34.6 (10.0) nonclinical group 33.6 (11.2)	Clinical group 49/51 nonclinical 37/63	242	VG	Met all COSMIN criteria for ROB and no identified methodological flaws	
Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4	Total population: 43 (11.38)	Total population 28.8/71.2	993	VG	Met all COSMIN criteria for ROB and no identified methodological flaws	

randomised
control trials
on the
efficacy of
internet
delivered
treatment.
Cross
sectional.

3 Months post treatment: Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4 randomised control trials on the efficacy of internet delivered treatment. Cross sectional.	Total population: 43 (11.38)	Total population: 28.8/71.2	830	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Child pre-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	9.29 (2.1)	52.2/47.8	695	D	Rated down due to caregiver input into the gold standard

Child 6 months post-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	9.29 (2.1)	Not reported	154	D	Large amount of attrition unexplained and had carer input in gold standard
Caregiver pre-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	42.6(5)	9.1/90.9	703	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Caregiver 6 months post-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English). Randomised control anxiety treatment trial	42.6(5)	Not reported	157	D	Large amount of attrition unexplained

Middle childhood: Hathway et al (2024)	Mini-SPIN	Australia (English) Randomised control trial anxiety treatment trial	8.66(1.4)	51.5/48.5	544	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Early adolescence: Hathway et al (2024)	Mini-SPIN	Australia (English) Randomised control trial anxiety treatment trial	13.11(1.3)	56/44	91	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Batterham et al (2017)	Mini-SPIN	Australia (English) Control trial online	25.4(3.4)	24/76	1687	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores

							may not be a true reflection of the Mini-SPIN
Carleton et al (2010)	Mini-SPIN	clinical sample were from the Anxiety Treatment and Research Centre at St. Joseph's Healthcare in Hamilton, Ontario	Men M=34.8 (11.7) women M=32.9 (11.3).	45.6/54.4	355	I	Correlated SPIN and MINI SPIN when results from MINI were derived from long form so as per COSMIN was rated Inadequate
Weeks et al (2007).	Mini-SPIN	United states. Treatment seeking sample who called adult anxiety	29.3 (11.41)	48.1/51.9	135	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		clinic of temple seeking treatment					
Connor et al (2000)	Mini-SPIN	Managed healthcare organisation	42.8(11.2)	32/68	1,017	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
de Lima Osório et al (2007)	Portuguese version	Private and a public university in a city in the interior of the State of Sao Paulo- Brazil.	21(2.83)	36.1/63.9	590	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores may not be a true reflection of the Mini-SPIN
Garcia-Lopez et al (2015)	Spanish version	Spanish schools	15.46(1.26)	clinical sample (n=421) 39.4/60.6	1034	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Study two Garcia-Lopez and Moore (2015)	Spanish version	Spanish schools	15.35(1.20)	47.5/52.5	354	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Study two Wiltink et al (2017)	German version	Germany. University Medical Centre.	48.8 (SD 18.2)	46/54	1012	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Ranta et al (2012)	Finnish version	School population sample	14.7 (1.1)	50.3/49.7	350	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores may not be a true reflection of the Mini-SPIN

Hypotheses testing

Seeley-Wait et al. (2009)	Mini-SPIN	Australia (English), Macquarie University Anxiety Research Unit. Cross-sectional	Clinical group 34.6 (10.0) non clinical group 33.6 (11.2)	Clinical group 49/51 non clinical 37/63	242	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Pre-treatment: Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4 randomised control trials on the efficacy of internet delivered treatment.	Total population: 43 (11.38)	Total population 28.8/71.2	993	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		Cross sectional.					
Post treatment: Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4 randomised control trials on the efficacy of internet delivered treatment. Cross sectional.	Total population: 43 (11.38)	Total population 28.8/71.2	830	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
3 Months post treatment: Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4	Total population: 43 (11.38)	Total population: 28.8/71.2	811	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		randomised control trials on the efficacy of internet delivered treatment. Cross sectional.					
Le Blanc et al (2014)	Mini-SPIN	United States (English) seeking treatment groups	SAD: 32.32 non SAD 31.43 SD not reported	SAD sample 56.6/42.5/0.9 missing. Non SAD Sample 45.3/54.7	435	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Pre-treatment Child: Hathaway et al (2024)	Mini-SPIN	Australia (English) Randomised control trial anxiety	9.29 (2.1)	52.2/47.8	695	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		treatment trial					
Child Post treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English) Randomised control trial anxiety treatment trial	9.29 (2.1)	52.2/47.8	170	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Child 6-month post-treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English) Randomised control trial anxiety treatment trial	9.29 (2.1)	52.2/47.8	154	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Caregiver pre- treatment: Hathaway et al (2024)	Mini-SPIN	Australia (English) Randomised control trial anxiety	42.6(5)	9.1/90.9	703	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Caregiver post treatment: Hathaway et al (2024)	Mini-SPIN	treatment trial Australia (English) Randomised control trial anxiety treatment trial	42.6(5)	9.1/90.9	177	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Caregiver 6 months post-treatment: Hathaway et al (2024)	Mini-SPIN	treatment trial Australia (English) Randomised control trial anxiety treatment trial	42.6(5)	9.1/90.9	157	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Batterham et al (2017)	Mini-SPIN	treatment trial Australia (English) Control trial online	25.4(3.4)	24/76	1687	D	Administered the full-scale SPIN and derived the Mini-SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared

variance) therefore scores may not be a true reflection of the Mini-SPIN

SIAS: Weeks et al (2007)	Mini-SPIN	United States (English)	Total population: Eligible arrivers 29.3 (11.41) Eligible nonarrivers 34.29 (11.53) Ineligible 31.45 (12.06)	Total population: Eligible arrivers 48.1/51.9 Eligible nonarrivers 44.4/55.6 ineligible 53.8/46.2	72	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition and missing data that was unexplained
LSAS: Weeks et al (2007)	Mini-SPIN	United States (English)	Total population: Eligible arrivers 29.3 (11.41) Eligible	Total population: Eligible arrivers 48.1/51.9 Eligible	69	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition and missing data that was unexplained

			nonarrivers	nonarrivers			
			34.29	44.4/55.6			
			(11.53)	ineligible 53.8/			
			Ineligible	46.2			
			31.45				
			(12.06)				
SPS: Weeks et al (2007)	Mini-SPIN	United States (English)	Total population: Eligible arrivers 29.3 (11.41)	Total population: Eligible arrivers 48.1/51.9	76	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition and missing data that was unexplained
			Eligible nonarrivers 34.29 (11.53)	Eligible nonarrivers 44.4/55.6			
			Ineligible 31.45 (12.06)	ineligible 53.8/ 46.2			
BFNE: Weeks et al (2007)	Mini-SPIN	United States (English)	Total population: Eligible	Total population: Eligible	72	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition

			Eligible	arrivers			and missing data that was
			arrivers	48.1/51.9			unexplained
			29.3 (11.41)	Eligible			
			Eligible	nonarrivers			
			nonarrivers	44.4/55.6			
			34.29	ineligible 53.8/			
			(11.53)	46.2			
			Ineligible				
			31.45				
			(12.06)				
GAD-Q-IV:	Mini-SPIN	United	Total	Total	96	D	All Weeks et al (2007)
Weeks et al		States	population:	population:			studies were rated as D due
(2007)		(English)	Eligible	Eligible			to high portion of attrition
			arrivers	arrivers			and missing data that was
			29.3 (11.41)	48.1/51.9			unexplained
			Eligible	Eligible			
			nonarrivers	nonarrivers			
			34.29	44.4/55.6			
			(11.53)	ineligible 53.8/			
			Ineligible	46.2			

			31.45 (12.06)				
PSWQ: Weeks et al (2007)	Mini-SPIN	United States (English)	Total population: Eligible arrivers 29.3 (11.41) Eligible nonarrivers 34.29 (11.53) Ineligible 31.45 (12.06)	Total population: Eligible arrivers 48.1/51.9 Eligible nonarrivers 44.4/55.6 ineligible 53.8/ 46.2	44	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition and missing data that was unexplained
Study one ASI: Weeks et al (2007)	Mini-SPIN	United States (English)	Total population: Eligible arrivers 29.3 (11.41) Eligible nonarrivers	Total population: Eligible arrivers 48.1/51.9 Eligible nonarrivers	56	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition and missing data that was unexplained

			34.29 (11.53) Ineligible 31.45 (12.06)	44.4/55.6 ineligible 53.8/ 46.2			
Study one BDI: Weeks et al (2007)	Mini-SPIN	United States (English)	Total population: Eligible arrivers 29.3 (11.41) Eligible nonarrivers 34.29 (11.53) Ineligible 31.45 (12.06)	Total population: Eligible arrivers 48.1/51.9 Eligible nonarrivers 44.4/55.6 ineligible 53.8/ 46.2	51	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition and missing data that was unexplained
Study one LSRD: Weeks et al (2007)	Mini-SPIN	United States (English)	Total population: Eligible arrivers	Total population: Eligible arrivers	84	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition

Study one SDS: Weeks et al (2007)	Mini-SPIN	United States (English)	29.3 (11.41)	48.1/51.9	62	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition and missing data that was unexplained
			Eligible	Eligible			
			nonarrivers	nonarrivers			
			34.29	44.4/55.6			
			(11.53)	ineligible 53.8/			
			Ineligible	46.2			
			31.45				
			(12.06)				
			Total	Total			
			population:	population:			
			Eligible	Eligible			
			arrivers	arrivers			
			29.3 (11.41)	48.1/51.9			
			Eligible	Eligible			
			nonarrivers	nonarrivers			
			34.29	44.4/55.6			
			(11.53)	ineligible 53.8/			
			Ineligible	46.2			
			31.45				
			(12.06)				

Study one QOLI: Weeks et al (2007)	Mini-SPIN	United States (English)	Total population: Eligible arrivers 29.3 (11.41) Eligible nonarrivers 34.29 (11.53) Ineligible 31.45 (12.06)	Total population: Eligible arrivers 48.1/51.9 Eligible nonarrivers 44.4/55.6 ineligible 53.8/ 46.2	82	D	All Weeks et al (2007) studies were rated as D due to high portion of attrition and missing data that was unexplained
Carlton et al (2010) Undergraduate sample	Mini-SPIN	Canada (English)	undergrad sample men (Mage = 20.3; SD = 2.6) women Mage = 20.1; SD = 3.3	22/78	227	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores may not be a true reflection of the Mini-SPIN

Carlton et al (2010) Clinical sample	Mini-SPIN	Canada (English) Anxiety Treatment and Research Centre at St. Joseph's Healthcare in Hamilton, Ontario	Men M=34.8 (11.7) women M= 32.9 (11.3).	45.6/54.4	355	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores may not be a true reflection of the Mini-SPIN
LSAS: Aderka et al (2013)	Mini-SPIN	United States and Canada (English) treatment trial	Total sample: 33.78(12.18)	Total sample: 62.12/37.88	534	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores may not be a true reflection of the Mini-SPIN

SPAI: Aderka et al (2013)	Mini-SPIN	United States and Canada (English) treatment trial	Total sample: 33.78(12.18)	Total sample: 62.12/37.88	162	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores may not be a true reflection of the Mini-SPIN
MADRS Aderka et al (2013)	Mini-SPIN	United States and Canada (English) treatment trial	Total sample: 33.78(12.18)	Total sample: 62.12/37.88	533	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores may not be a true reflection of the Mini-SPIN
LSAS: Aderka et al (2013)	Mini- SPIN-R	United States and Canada (English)	Total sample: 33.78(12.18)	Total sample: 62.12/37.88	533	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared

		treatment trial					variance) therefore scores may not be a true reflection of the Mini-SPIN
SPAI: Aderka et al (2013)	Mini- SPIN-R	United States and Canada (English) treatment trial	Total sample: 33.78(12.18)	Total sample: 62.12/37.88	162	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores may not be a true reflection of the Mini-SPIN
MADRS: Aderka et al (2013)	Mini- SPIN-R	United States and Canada (English) treatment trial	Total sample: 33.78(12.18)	Total sample: 62.12/37.88	532	D	Administered the full scale SPIN and derived the Mini- SPIN scores from this, this could have introduced bias (i.e reporting bias/ shared variance) therefore scores may not be a true reflection of the Mini-SPIN
Study one Garcia-Lopez	Spanish version of	Spain (Spanish)	15.04(1.33)	46.6/53.4	573	VG	Met all COSMIN criteria for ROB and no identified

and Moore (2015)	the Mini- SPIN	Community sample from schools						methodological flaws. *although psychometric props for each measure is not clearly outlined in paper we rated VG as these psychometrics are well established for the use in this population in other articles
Study two all participants: Garcia-Lopez and Moore (2015)	Spanish version of the Mini- SPIN	Spain (Spanish)	15.35 (SD 1.20)	47.5/52.5	354	VG	Met all COSMIN criteria for ROB and no identified methodological flaws. *although psychometric props for each measure is not clearly outlined in paper we rated VG as these psychometrics are well established for the use in this population in other articles	

Study two clinical: Garcia- Lopez and Moore (2015)	Spanish version of the Mini- SPIN	Spain (Spanish)	15.37 (1.17)	37.4/62.6	147	VG	Met all COSMIN criteria for ROB and no identified methodological flaws. *although psychometric props for each measure is not clearly outlined in paper we rated VG as these psychometrics are well established for the use in this population in other articles
Study two healthy controls: Garcia-Lopez and Moore (2015)	Spanish version of the Mini- SPIN	Spain (Spanish)	Not reported	54.6/45.4	207	VG	Met all COSMIN criteria for ROB and no identified methodological flaws. *although psychometric props for each measure is not clearly outlined in paper we rated VG as these psychometrics are well established for the use in

							this population in other articles
Mörtberg and Jansson Fröjmark (2019)	Swedish version of the Mini-SPIN	Sweden (Swedish) university of Stockholm	27.7 (7.5)	24/76	161	D	Administered the full version of the SPIN hence could have introduced some bias
Study one: Wiltink et al (2017)	German version of the Mini-SPIN	Germany (German) University Medical Center	38.5 (SD 13.2)	39/61	1274	VG	Met all COSMIN criteria for ROB and no identified methodological flaws.
University sample: Osório et al (2010)	Portuguese version of the Mini-SPIN	Brazil (Portuguese)	21.41(3.3)	44.2/55.8	2314	D	Administered the full version of the SPIN hence could have introduced some bias
Clinical: Osório et al (2010)	Portuguese version of the Mini-SPIN	Brazil (Portuguese)	21.2 (2.7)	38.2/61.8	178	D	Administered the full version of the SPIN hence could have introduced some bias

Nonclinical: Osório et al (2010)	Portuguese version of the Mini- SPIN	Brazil (Portuguese)	Not reported	Not reported	90	D	Administered the full version of the SPIN hence could have introduced some bias
--	---	------------------------	--------------	--------------	----	---	--

Responsiveness

Seeley-Wait et al (2009)	Mini-SPIN	Australia (English), Macquarie University Anxiety Research Unit. Cross- sectional	Total clinical group 34.6 (10.0) total non-clinical group 33.6 (11.2)	Total clinical group 49/51 nonclinical 37/63	n=89 treated clinical group n=26 waitlist group	VG	Met all COSMIN criteria for ROB and no identified methodological flaws
Fogliati et al (2016)	Mini-SPIN	Australia (English), Macquarie University. Data from 4 randomised control trials on the	43 (11.38)	28.8/71.2	345	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

		efficacy of internet delivered treatment.					
		Cross sectional.					
Mewton et al (2014)	Mini-SPIN	Australia (English), Clinical research unit for anxiety and depression.	40.8(13.8)	39/61	635	VG	Met all COSMIN criteria for ROB and no identified methodological flaws

Note. SAD= social anxiety disorder, VG= Very good, D= doubtful, I=inadequate, n= number, f=female, m=male, SD= standard deviation, OMI=outcome measurement instrument

Appendix J

Content validity table showing reviewer ratings of content validity for Mini-SPIN, Mini-SPIN-R and all language versions

Table 1J

Content validity table showing reviewer ratings of content validity for Mini-SPIN

Mini-SPIN			
Mini- SPIN	Consensus rater	Quality of Evidence	Reason
Relevance			
Are the included items relevant for the construct of interest?	+		Over 85% of items were regarded as relevant by the review team
Are the included items relevant for the target population of interest?	+		The review team rated them as sufficient as the questions are appropriate for adult population of which the measure was initially developed for
Are the included items relevant for the context of use of interest?	+		The review team rated this as sufficient. The Mini- SPIN was developed as a screening tool so the included items are relevant for the use of briefly assessing.
Are the response options appropriate?	+		The review team rated this as sufficient as we felt that the

Mini- SPIN	Consensus rater	Quality of Evidence	Reason
Is the recall period appropriate?	+		Likert scale provided adequate response options for the questions, with a broad enough range to capture experiences. The review team rated this as sufficient, one week is an appropriate time to ask respondents to recall for social anxiety symptoms.
RELEVANCE RATING (+ / - / ± / ?)	+	Very Low	Only reviewer rating so was considered low evidence based on COSMIN standards.
Comprehensiveness			
Are all key concepts included?	-		The review team agreed that the measure does not contain items relevant to ALL areas of the construct of interest so was rated insufficient. The Mini-SPIN is derived off the full-scale SPIN which is assessing the construct of generalised social anxiety disorder. The full scale operationalises this construct based on fear,

Mini- SPIN	Consensus rater	Quality of Evidence	Reason
			avoidance and physiological symptoms. The Mini-SPIN contains relevant items on fear and avoidance but there are no items assessing physiological symptoms. Therefore, we rated the comprehensiveness of the Mini-SPIN as insufficient due to the absence of an item exploring physiological symptoms. Only reviewer rating
COMPREHENSIVENESS RATING (+ / - / ± / ?)	-	Very low	
Comprehensibility			
Are the PROM instructions understood by the population of interest as intended	N/a	N/a	N/a
Are the PROM items and response options understood by the population of interest as intended?	N/a	N/a	N/a
Are the PROM items appropriately worded?	+		The review team rated this as sufficient as the items were worded appropriately for an adult population

Mini- SPIN	Consensus rater	Quality of Evidence	Reason
Do the response options match the question	+		The review team rated this as sufficient as we felt like the response options reflected an appropriate way to answer the question.
COMPREHENSIBILITY RATING (+ / - / $\pm$ / ?)	+	Very low	Only reviewer ratings, therefore, following COSMIN guidelines is very low evidence. Overall, comprehensibility was considered sufficient.
OVERALL CONTENT VALIDITY RATING (+ / - / $\pm$ / ?)	$\pm$	Very Low	Due to comprehensiveness scoring insufficient but comprehensibility and relevance scoring sufficient we had to conclude an inconsistent rating overall, as per the COSMIN guidelines.

Score: + = sufficient; - = insufficient; ? = indeterminate; $\pm$ = inconsistent

Table 2J

Content validity table showing reviewer ratings of content validity for Mini-SPIN-R

Mini- SPIN- R	Consensus rater	Quality of Evidence	Reason
Relevance			
Are the included items relevant for the construct of interest?	+		Over 85% of items were considered relevant by the review team.
Are the included items relevant for the target population of interest?	+		The review team rated them as sufficient as the questions are appropriate for adult population of which the measure was initially developed for
Are the included items relevant for the context of use of interest?	+		The review team rated this as sufficient. The Mini- SPIN-R was developed as a screening tool so the included items are relevant for the use of briefly assessing.
Are the response options appropriate?	+		The review team rated this as sufficient as we felt that the Likert scale provided adequate response options for the

Mini- SPIN- R	Consensus rater	Quality of Evidence	Reason
Is the recall period appropriate?	+		questions, with a broad enough range to capture experiences. The review team rated this as sufficient, one week is an appropriate time to ask respondents to recall for social anxiety symptoms.
RELEVANCE RATING (+ / - / ± / ?)	+	Very Low	Only reviewer rating so was considered low evidence based on COSMIN standards.
Comprehensiveness			
Are all key concepts included?	-		The measure does not contain items relevant to all areas of the construct of interest so was rated insufficient. The Mini-SPIN-R is also derived off the full-scale SPIN which is assessing the construct of generalised social anxiety disorder. The full scale operationalises this construct based on fear, avoidance and physiological symptoms. The Mini-SPIN-R contains relevant items on fear and avoidance but there are no items assessing physiological symptoms.

Mini- SPIN- R	Consensus rater	Quality of Evidence	Reason
			Therefore, we rated the comprehensiveness of the Mini-SPIN- R as insufficient due to the absence of an item exploring physiological symptoms. Hence, we concluded that all key concepts were not included. Only reviewer rating
COMPREHENSIVENESS RATING (+ / - / ± / ?)	-	Very low	
Comprehensibility			
Are the PROM instructions understood by the population of interest as intended	N/a	N/a	N/a
Are the PROM items and response options understood by the population of interest as intended?	N/a	N/a	N/a
Are the PROM items appropriately worded?	+		The review team rated this as sufficient as the items were worded appropriately for an adult population
Do the response options match the question	+		The review team rated this as sufficient as we felt like the response options reflected an

Mini- SPIN- R	Consensus rater	Quality of Evidence	Reason
COMPREHENSIBILITY RATING (+ / - / $\pm$ / ?)	+	Very low	appropriate way to the question. Only reviewer ratings so following COSMIN guidelines is very low evidence. Overall, comprehensibility was considered sufficient.
OVERALL CONTENT VALIDITY RATING (+ / - / $\pm$ / ?)	$\pm$	Very Low	Due to comprehensiveness scoring insufficient but relevance and comprehensibility scoring sufficient we had to conclude an inconsistent rating overall, as per the COSMIN guidelines.
Score: + = sufficient; - = insufficient; ? = indeterminate; $\pm$ = inconsistent			

Table 3J

Content validity table showing reviewer ratings of content validity for all language versions of the Mini-SPIN ((Norwegian, German, Swedish, Portuguese, Spanish, Finnish)

Mini- SPIN language versions	Consensus rater	Quality of Evidence	Reason
Relevance			
Are the included items relevant for the construct of interest?	+		All language versions were assumed to be the same as the Mini-SPIN original as none of the authors of the language versions stated any changes to the questions. Hence as a review team we assumed the same items were translated therefore, over 85% of items were considered relevant by the review team.
Are the included items relevant for the target population of interest?	+		Similar to above, none of the authors of translated versions stated changing the items hence, the review team rated them as sufficient as the questions are

Mini- SPIN language versions	Consensus rater	Quality of Evidence	Reason
Are the included items relevant for the context of use of interest?	+		appropriate for adult population of which the measure was initially developed for The review team rated this as sufficient based on the assumption that the authors did not state changing the items from the original.
Are the response options appropriate?	+		The review team rated this as sufficient as we felt that the Likert scale provided adequate response options for the questions, with a broad enough range to capture experiences.
Is the recall period appropriate?	+		The review team rated this as sufficient, one week is an appropriate time to ask respondents to recall for social anxiety symptoms. The authors of the language versions did not state that they had changed the recall period
RELEVANCE RATING (+ / - / ± / ?)	+	Very Low	Only reviewer rating so was considered low evidence based on COSMIN standards.
Comprehensiveness			

Mini- SPIN language versions	Consensus rater	Quality of Evidence	Reason
Are all key concepts included?	-		Assuming as the authors did not mention changing items, that the items are consistent with the original Mini-SPIN. The different language versions of the measure do not contain items relevant to all areas of the construct of interest so was rated insufficient. As the language versions are also derived from the full-scale SPIN which is assessing the construct of generalised social anxiety disorder. The full scale operationalises this construct based on fear, avoidance and physiological symptoms. The Mini-SPIN language versions are assumed to contain relevant items on fear and avoidance but there are no items assessing physiological symptoms.
COMPREHENSIVENESS RATING (+ / - / ± / ?)	-	Very low	Only reviewer rating

Comprehensibility

Mini- SPIN language versions	Consensus rater	Quality of Evidence	Reason
Are the PROM instructions understood by the population of interest as intended	N/a	N/a	N/a
Are the PROM items and response options understood by the population of interest as intended?	N/a	N/a	N/a
Are the PROM items appropriately worded?	?		As per the COSMIN guidelines the review team cannot review the comprehensibility as non of the authors are familiar with any of the languages.
Do the response options match the question	?		As per the COSMIN guidelines the review team cannot review the comprehensibility as non of the authors are familiar with any of the languages
COMPREHENSIBILITY RATING (+ / - / ± / ?)	?	Very low	Only reviewer ratings so following COSMIN guidelines is very low evidence. Overall, comprehensibility was considered sufficient.
OVERALL CONTENT VALIDITY RATING (+ / - / ± / ?)	?	Very Low	Due to not being able to review the comprehensibility

Mini- SPIN language versions	Consensus rater	Quality of Evidence	Reason
			of the language version of the Mini-SPIN, according to COSMIN guidelines our overall rating for all the language versions is indeterminate.

Score: + = sufficient; - = insufficient; ? = indeterminate; $\pm$ = inconsistent

Appendix K

Gold standard comparators for criterion validity

Table 1K

Gold standards for criterion validity

Gold standard	Rational
Structured Clinical Interview for DSM-IV (SCID-IV) (Any version)	Included as it is a diagnostic interview assessing using the DSM-5 criteria. Additionally, diagnostic interviews are often administered by professionals and are therefore deemed the “gold standard” in clinical practice, therefore, provide a good external criterion
Anxiety and Related Disorders Interview Schedule for DSM-IV (ADIS-5) (Any version)	Included as it is a diagnostic interview assessing using the DSM-5 criteria. Additionally, diagnostic interviews are often administered by professionals and are therefore deemed the “gold standard” in clinical practice, therefore, provide a good external criterion
Additional versions found in review: The Anxiety Disorders Interview Schedule for DSM-IV—Lifetime Version	Included as it is a diagnostic interview assessing using the DSM-5 criteria. Additionally, diagnostic interviews are often administered by

Additional versions found in review: The Anxiety Disorders
Interview Schedule for DSM-IV—Lifetime Version

professionals and are therefore deemed the “gold standard” in clinical practice, therefore, provide a good external criterion

Included as it is a diagnostic interview assessing using the DSM-5 criteria. Additionally, diagnostic interviews are often administered by professionals and are therefore deemed the “gold standard” in clinical practice, therefore, provide a good external criterion

Additional versions found in review: The Anxiety Disorders
Interview Schedule for DSMIV: Child and Parent Version (ADIS-IV-
C/P)

Included as it is a diagnostic interview assessing using the DSM-5 criteria. Additionally, diagnostic interviews are often administered by professionals and are therefore deemed the “gold standard” in clinical practice, therefore, provide a good external criterion

Mini International neuropsychiatric interview version 5.0.0

Included as it is a diagnostic interview validated against/ assesses against the DSM-IV criteria (Sheehan et al., 1998) therefore provides a good external criterion.

Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version (K-SADS-PL)

Included as it is a diagnostic interview often administered by experienced clinicians and uses the DSM-IV criteria (Kaufman et al., 1997).

Full scale Social Phobia Inventory (SPIN)

Used as a gold standard as this is the original measure the Mini-SPIN is based off. Therefore, we would assume that it would perform similarly to the full SPIN as that is the gold standard criterion for the abbreviated version.

Diagnosis made by Psychiatrist according to DSM-IV or ICD-10 criteria

We considered this a gold standard external criterion as it is a direct assessment against the DSM/ICD criteria of social anxiety

Appendix L

Extracted data for each study per OMI

Table 1L

Extracted data for all included study per OMI

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
MINI-SPIN	IRT reported but no CFA fit indices so can't be interpreted	$\alpha = .79$	Not reported	Not reported	AUC= 0.80	Convergence with another Social anxiety measure (r = .66) = (1-) 0%	Not reported	Batterham et al (2017)
	Not reported	$\alpha = .91$	Not reported	0.70 reliability	AUC = 0.97	Convergence with other social anxiety measures (r=0.81, P<0.001 and r = 0.77, P < .001) (2+/2total) =100%	-(d = 0.74) -Treated group were 8.9 (SD = 2.8) and 6.5 (SD = 3.6) at pretreatment and posttreatment assessments,	Seeley et al (2009)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
							respectively. Reliability through test - retest = 0.7, SEM=1.53. Study had a 2.4point reduction - The effect size for treatment group was 0.74 and the effect size for waitlist group 0.20 -Comparison with two other social anxiety measures, (r = 0.59, P < .001)	

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
							and (r = 0.52, P < .001) (5+) 5/5=100%	
	Not reported	$\alpha = .90$	Not reported	Test-retest reliability over a 1-4-week period r = .82.	AUC=0.85	Divergent hypothesis: (r=0.30) (r=0.35) Convergent with anxiety measures: (r = .34) r=0.38 (3+,1-) 75%	- All participants pre treatment M=6.07 SD= 3.62 and reliability =0.82 test retest SEM= 1.54 MCID= 1*SEM= 1.54- For social phobia group pre mean 8.32 post mean 5.74 = study had a 2.58 point reduction	Pre-Treatment Fogliati et al (2016)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
							- effect size of MINI SPIN post= 0.84 and 3 month post =1.06 - effect size of MINI SPIN post= 0.53 and 3 month post =0.64 (3+)=100%	
	Not reported	$\alpha = .90$	Not reported	Not reported	Not reported	Divergent hypothesis: ($r=0.46$) $r=0.51$	Not reported	Post-Treatment Fogliati et al (2016)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
						Convergent with other anxiety measures: (r = .50) r=0.56 (1+,3-) 1/4=25%		
	Not reported	$\alpha = .90$	Not reported	Not reported	AUC= 0.80	Divergent hypothesis: (r=0.44) (r=0.51)	Not reported	3 month follow up Fogliati et al (2016)
						Convergent with other anxiety measures: (r = .50) (r=0.54)		

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	$\alpha = .63$	Not reported	Not reported	Not reported	(1+,3-) 1/4=25% Convergent hypothesis with other social anxiety measures: r=0.37 r=0.34 r=0.32 r=21 r=0.20 r=0.15	Not reported	Le Blanc et al (2014)
	Not reported	$\Omega=0.88$	Not reported	Not reported	Not reported	(-6,0+) 0% Not reported	Not reported	Sunderland et al (2018)
	Not reported	$\alpha = .70$	Not reported	Not reported	AUC value of 0.74	Convergent validity to other social anxiety	Not reported	Child pre-treatment:

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
						measures: r=0.618 Divergent from unrelated constructs: r = .346 (2-/total) 0%		Hathaway et al (2024)
	Not reported	$\alpha = .77$	Not reported	Not reported	Not reported	Convergent validity to other social anxiety measures: r=0.71 Divergent from unrelated constructs: r = .390	Not reported	Child post treatment: Hathaway et al 2024

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	$\alpha = .77$	Not reported	Not reported	AUC value of 0.68	(1+,1-) 50% Convergent validity to other social anxiety measures: $r = .684$ Divergent from unrelated constructs: $r = .450$	Not reported	Child 6 month follow up: Hathaway et al (2024)
	Not reported	$\alpha = .85$	Not reported	Not reported	AUC value of 0.80	(2-) 0% Convergent to other social anxiety: ($r = .676$),	Not reported	Caregiver pre-treatment: Hathaway et al 2024

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
						Divergent to unrelated constructs: r=0.210		
	Not reported	$\alpha = .85$	Not reported	Not reported	Not reported	(1+,1-) 50% Convergent to other social anxiety: r=0.702	Not reported	Caregiver post-treatment: Hathaway et al (2024)
						Divergent to unrelated constructs: r=0.260		
						(2+,0-) 100%		

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	$\alpha = .81$	Not reported	Not reported	At 6-month follow-up, the Mini-SPIN exhibited acceptable discrimination with an AUC value of 0.76	Convergent to other social anxiety: $r=0.652$ Divergent to unrelated constructs: $r=0.273$ (1+,1-) 50%	Not reported	Caregiver 6 month post: Hathaway et al (2024)
	Not reported	$\alpha = .66$	Not reported	Not reported	AUC value of 0.72	Not reported	Not reported	Middle childhood: Hathaway
	Not reported	$\alpha = .84$	Not reported	Not reported	AUC value of 0.76	Not reported	Not reported	Early adolescence: Hathaway et al (2024)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	$\alpha = .80$	Not reported	Not reported	Not reported	Not reported	Not reported	Gordon and Heimberg (2011)
	Not reported	$\alpha = .85$	Not reported	Not reported	No AUC reported ADIS-Interview Schedule as gold standard. Sensitivity 95.5% Specificity 45.5% diagnostic efficiency 87.3%	Convergence with social anxiety: $r=0.57$ $r=0.46$ $r=0.34$ $r=0.44$ Convergence with generalised anxiety: $r_s = .05$ to $.19$	Not reported	Weeks et al (2017)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
						Divergent from unrelated constructs: rs= .05 to .19 r=0.28 r=0.38 r=-0.07		
	Not reported	$\alpha = .81$	Not reported	Not reported	Not reported	(9-,2+) 18.8% Not reported	Not reported	Pre-treatment Weeks et al (2017)
	Not reported	$\alpha = .84$	Not reported	Not reported	Not reported	Not reported	effect size = 0.62 (confidence interval 0.49-0.75) 1+ =100%	Baseline: Mewton et al (2014)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	$\alpha = .86$	Not reported	Not reported	Not reported	Not reported	Not reported	Post-treatment: Mewton et al (2014)
	Not reported	$\alpha = .66$	Not reported	Not reported	Not reported	Convergent to other social anxiety measures: r=0.42 r = 0.40 r=0.43 r=0.38 Divergent hypothesis to unrelated constructs: r=0.15 (1+,4-) 1/5=20%	Not reported	Aderka et al (2013)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	Not reported	Not reported	Not reported	Mini SPIN AUC = 0.92	Convergent validity to other social anxiety: r=0.85 r=0.86 (2+/2) 100%	Not reported	Carlton et al (2010)
	Not reported	Not reported	Not reported	Not reported	At a cutoff score of 6 demonstrated a sensitivity of 88.7%, specificity of 90.0%, PPV of 52.6%, NPV of 98.5%, and a diagnostic efficiency of 89.9% (Table	Not reported	Not reported	Connor et al (2001)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
Mini- SPIN-R	Not reported	$\alpha = 0.72$	Not reported	Not reported	Not reported	Convergent hypothesis with other social anxiety measures:	Not reported	Aderka et al (2013)

4). Sensitivity
and
specificity
were similar
for men
(88.7% and
90.0%,
respectively)
and women
(89.9% and
89.5%,
respectively).

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
						r=0.52, r=0.48, r=0.52, r=0.39.		
						Divergent from unrelated constructs (MADRS): r=0.210		
						(1+,4-) 1/5=20%		
Norwegian version	PCA 1 factor explained variance of 79.4% and factor	alpha = 0.87	Not reported	Not reported	Not reported	Not reported	Not reported	Dahl. A and Dahl. C (2010)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	loadings are all above 0.30 (0.97 and 0.84 item 1 and 3) item 2 on a forced two - factor solution with direct oblimin rotation explained 91.1% of the variance. Where item 2 loaded on							

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	to factor 2 on by 0.98 PCA one factor explained variance 72.4% all factors are above 0.30. A forced 2 factor solution with direct oblimin rotation explained 87.4% of the variance. In	$\alpha = 0.81$	Not reported	Not reported	Not reported	Not reported	Not reported	Olsson and Dahl (2012)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	the latter factor solution, factor one consisted of items 1 and 3 with loadings of 0.99 and 0.69. Item 2 loaded on to factor 2 with factor loading of 0.98							
	PCA one factor explained variance	$\alpha = 0.81$	Not reported	Not reported	Not reported	Not reported	Not reported	Dahl. C & Dahl. A (2010)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
German version	72.4% all factors are above 0.30							
	Not reported	$\alpha = 0.8$	Not reported	Not reported	Not reported	Not reported	Not reported	Dahl and Olsson (2013)
	Not reported	$\alpha = 0.8$	No important differences found. Model 0: Weak Invariance χ^2 scaled = 5.63, df = 14, CFI = 1.000, RMSEA =	Not reported	AUC or correlations not reported but did report sensitivity and specificity	Not reported	Not reported	Wiltink et al (2017) Study 2

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
			0.0. Model					
			1: Strong					
			Invariance					
			χ^2 scaled =					
			25.65, df =					
			27, CFI =					
			.996, Δ CFI					
			= -.004,					
			RMSEA =					
			.020,					
			Δ RMSEA					
			= +.020.					
			Model 2a:					
			Strict					
			Invariance					
			χ^2 scaled =					
			61.00, df =					
			48, CFI =					
			.968, Δ CFI					

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
			= $-.028$, RMSEA = .041, Δ RMSEA = $+.021$. Model 2b: Partial Strict Invariance χ^2 scaled = 51.40, df = 47, CFI = .989, Δ CFI = $-.007$, RMSEA = .024, Δ RMSEA = $+.004$					

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	$\alpha = 0.83$	Not reported	Test re-test reliability Rho = 0.61 ($p < 0.001$).	Not reported	Convergence with other social anxiety measures: $r = 0.704$. Convergence with other anxiety measures: $r = 0.455$. Twi divergent hypothesis from unrelated constructs $r = 0.485$, $r = 0.266$ (3+,1-) 75%	Not reported	Wiltink et al (2017) Study 1

Swedish
version

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	$\alpha=0.68$	Not reported	Not reported	Not reported	Convergence with other social anxiety measures $r=0.91$, convergence with other anxiety measures $r=0.41$. Divergence from unrelated constructs $r=0.31$ and $r=-0.31$ (2+,2-) 50%	Not reported	Mortberg et al (2018)
Portuguese version	Not reported	$\alpha=0.73$	Not reported	Not reported	Not reported	Convergent hypothesis to other social anxiety measure,	Not reported	University students: Osório et al (2010).

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
						r=0.88, r=0.88, r=0.67, r=0.82. Convergent hypothesis to generalised anxiety measures: r=0.52, r=0.44, r=0.48, r=0.43, r=0.40 Divergent hypothesis: r=- 0.54, r=-0.29, r=0.58 (8+,4-) 66%		
	Not reported	$\alpha=0.66$	Not reported	Not reported	Not reported	Convergent validity against other social	Not reported	Clinical Sample:

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
						anxiety measures: r=0.82, r=0.80, r=0.64, r=0.77 Convergent validity to general anxiety measures: r=0.23, r=0.13, r=0.22, r=0.22, r=0.21 Divergent hypothesis to unrelated measures r=- 0.22, r=-0.31, r=0.05 (5+,7-) 41%		Osório et al (2010).

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	$\alpha=0.49$	Not reported	Not reported	Not reported	Convergent hypothesis with social anxiety measures: r=0.86 r=0.87 r=0.73 r=0.78 Convergent hypothesis with generalised anxiety measures: r=0.3 r=0.29 r=0.20 r=0.30 r=0.26	Not reported	Noncases sample: Osório et al (2010).

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
Spanish version	Not reported	Not reported	Not reported	Not reported	AUC=0.81	Divergent hypothesis with unrelated constructs: r=-30 r=-0.33 r=0.19 (8+,4-) 67% Not reported	Not reported	de Lima Osório et al (2007)
	Not reported	$\alpha=.78$	Not reported	Not reported	Not reported	Convergent hypothesis with other social anxiety measures:	Not reported	Study one: Garcia-Lopez and Moore (2015)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
						r=0.63		
						r=0.52		
						r=0.51		
						r=0.50		
						r=0.60		
						(5-) 0%		
	Not reported	$\alpha=0.82$	Not reported	Not reported	AUC= 0.97	Convergent hypothesis with other social anxiety measures:	Not reported	Study two all participants: Garcia-Lopez and Moore (2015)
						r=0.75		
						r=0.79		
						r=0.74		
						r=0.58		
						r=0.70		
						r=0.68		
						(4+,-2) 66%		

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
	Not reported	$\alpha=0.55$	Not reported	Not reported	Not reported	Convergent hypothesis with other social anxiety measures: $r=0.49$ $r=0.47$ $r=0.42$ $r=0.42$ $r=0.38$ $r=0.20$	Not reported	Study two: SAD sample Garcia-Lopez and Moore (2015)
	Not reported	$\alpha=0.41$	Not reported	Not reported	Not reported	(6-) 0% Convergent hypothesis with other social anxiety measures: $r=0.43$ $r=0.50$	Not reported	Study two healthy control: Garcia-Lopez and Moore (2015)

OMI	Structural validity	Internal consistency	Cross cultural	Reliability	Criterion	Construct	responsiveness	Study
Finnish version						r=0.41		
						r=0.31		
						r=0.36		
						r=0.32		
						(6-) 0%		
	Not reported	Not reported	Not reported	Not reported	AUC 0.88	Not reported	Not reported	Garcia-Lopez et al (2015)
	Not reported	Not reported	Not reported	Not reported	The AUC= 0.92	Not reported	Not reported	Ranta et al (2012)

Appendix M

Journal requirements for Qualitative Research in Psychology Journal

Qualitative Research in Psychology

[Submit ▾](#)
[About](#)
[Browse ▾](#)
[Subscribe ▾](#)

Q

About the Journal

Qualitative Research in Psychology is an international, peer-reviewed journal publishing high-quality, original research. Please see the journal's [Aims & Scope](#) for information about its focus and peer-review policy.

Please note that this journal only publishes manuscripts in English.

Qualitative Research in Psychology accepts the following types of article: Articles, Book Reviews.

Qualitative Research in Psychology aims to become the primary forum for qualitative researchers in all areas of psychology—cognitive, social, developmental, educational, clinical, health, and forensic—as well as for those conducting psychologically relevant qualitative research in other disciplines.

Qualitative Research in Psychology is dedicated to exploring and expanding the territory of qualitative psychological research, strengthening its identity within the international research community and defining its place within the undergraduate and graduate curriculum. The journal will be broad in scope, presenting the full range of qualitative approaches to psychological research. The journal aims to firmly establish qualitative inquiry as an integral part of the discipline of psychology; to stimulate discussion of the relative merits of different qualitative methods in psychology; to provide a showcase for exemplary and innovative qualitative research projects in psychology; to establish appropriately high standards for the conduct and reporting of qualitative research; to establish a bridge between psychology and the other social and human sciences where qualitative inquiry has a proven track record; and to place qualitative psychological inquiry appropriately within the scientific, paradigmatic, and philosophical issues that it raises.

Open Access

You have the option to publish open access in this journal via our Open Select publishing program. Publishing open access means that your article will be free to access online immediately on publication, increasing the visibility, readership and impact of your research. Articles published Open Select with Taylor & Francis typically receive 35% more citations* and over 5 times as many downloads** compared to those that are not published Open Select.

Your research funder or your institution may require you to publish your article open access. Visit our [Author Services](#) website to find out more about open access policies and how you can comply with these.

You will be asked to pay an article publishing charge (APC) to make your article open access and this cost can often be covered by your institution or funder. Use our [APC finder](#) to view the APC for this journal.

Please visit our [Author Services website](#) if you would like more information about our Open Select Program.

*Citations received up to 7th August 2024 for articles published in 2019-2023. Data obtained on 7th August 2024, from Digital Science's Dimensions platform, available at <https://app.dimensions.ai> **Usage in 2021-2023 for articles published in 2019-2023.

Peer Review and Ethics

Taylor & Francis is committed to peer-review integrity and upholding the highest standards of review. Once your paper has been assessed for suitability by the editor, it will then be single anonymous peer reviewed by two independent, anonymous expert. If you have shared an earlier version of your Author's Original Manuscript on a preprint server, please be aware that anonymity cannot be guaranteed. Further information on our preprints policy and citation requirements can be found on our [Preprints Author Services page](#). Find out more about [what to expect during peer review](#) and read our guidance on [publishing ethics](#).

Preparing Your Paper

Structure

Your paper should be compiled in the following order: title page; abstract; keywords; main text introduction, materials and methods, results, discussion; acknowledgments; declaration of interest statement; references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figures; figure captions (as a list).

Word Limits

Please include a word count for your paper. There are no word limits for papers in this journal.

Style Guidelines

Please refer to these [quick style guidelines](#) when preparing your paper, rather than any published articles or a sample copy.

Any spelling style is acceptable so long as it is consistent within the manuscript.

Any form of consistent quotation style is acceptable.

Please note that long quotations should be indented without quotation marks.

Formatting and Templates

Papers may be submitted in Word or LaTeX formats. Please do not submit your paper as a PDF. Figures should be saved separately from the text. To assist you in preparing your paper, we provide formatting template(s).

[Word templates](#) are available for this journal. Please save the template to your hard drive, ready for use.

If you are not able to use the template via the links (or if you have any other template queries) please contact us [here](#).

References

Please use this [reference guide](#) when preparing your paper.

Taylor & Francis Editing Services

To help you improve your manuscript and prepare it for submission, Taylor & Francis provides a range of editing services. Choose from options such as English Language Editing, which will ensure that your article is free of spelling and grammar errors, Translation, and Artwork Preparation. Taylor & Francis Editing Services can also help you create research promotion materials, including infographics, video abstracts, lay summaries and graphical abstracts, to support your article's impact. For more information, including pricing, [visit this website](#).

Checklist: What to Include

1. **Author details.** Please ensure all listed authors meet the [Taylor & Francis authorship criteria](#). All authors of a manuscript should include their full name and affiliation on the cover page of the manuscript. Where available, please also include ORCiDs and social media handles (Facebook, Twitter or LinkedIn). One author will need to be identified as the corresponding author, with their email address normally displayed in the article PDF (depending on the journal) and the online article. Authors' affiliations are the affiliations where the research was conducted. If any of the named co-authors moves affiliation during the peer-review process, the new affiliation can be given as a footnote. Please note that no changes to affiliation can be made after your paper is accepted. [Read more on authorship](#).
2. Should contain an unstructured abstract of 200 words. Read tips on [writing your abstract](#).
3. You can opt to include a **video abstract** with your article. [Find out how these can help your work reach a wider audience, and what to think about when filming](#). Taylor & Francis Editing Services provides a [video abstract creation service](#) for a fee.
4. Do not include **keywords**. Read [making your article more discoverable](#), including information on choosing a title and search engine optimization.
5. **Funding details.** Please supply all details required by your funding and grant-awarding bodies as follows:
For single agency grants
This work was supported by the [Funding Agency] under Grant [number xxxx].
For multiple agency grants
This work was supported by the [Funding Agency #1] under Grant [number xxxx]; [Funding Agency #2] under Grant [number xxxx]; and [Funding Agency #3] under Grant [number xxxx].

6. **Disclosure statement.** This is to acknowledge any financial or non-financial interest that has arisen from the direct applications of your research. If there are no relevant competing interests to declare please state this within the article, for example: *The authors report there are no competing interests to declare.* [Further guidance on what is a conflict of interest and how to disclose it.](#)
7. **Data availability statement.** If there is a data set associated with the paper, please provide information about where the data supporting the results or analyses presented in the paper can be found. Where applicable, this should include the hyperlink, DOI or other persistent identifier associated with the data set(s). [Templates](#) are also available to support authors.
8. **Data deposition.** If you choose to share or make the data underlying the study open, please deposit your data in a [recognized data repository](#) prior to or at the time of submission. You will be asked to provide the DOI, pre-reserved DOI, or other persistent identifier for the data set.
9. **Supplemental online material.** Supplemental material can be a video, dataset, fileset, sound file or anything which supports (and is pertinent to) your paper. Articles with extenders, such as infographics or video summaries, are up to 108% more likely to be downloaded (based on data in May 2024 from Plain Language Summary of Publication and Clinical Trial Protocol articles published in Future Oncology in 2023). We publish supplemental material online via Figshare. Find out more about [supplemental material and how to submit it with your article](#). Taylor & Francis Editing Services can help you create research promotion materials, including infographics, video abstracts, lay summaries and graphical abstracts, to support your article's impact. For more information, including pricing, [visit this website](#).

10. **Figures.** Figures should be high quality (1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour, at the correct size). Figures should be supplied in one of our preferred file formats: PS, JPEG, TIFF, or Microsoft Word (DOC or DOCX) files are acceptable for figures that have been drawn in Word. For information relating to other file types, please consult our [Submission of electronic artwork](#) document.
11. **Tables.** Tables should present new information rather than duplicating what is in the text. Readers should be able to interpret the table without reference to the text. Please supply editable files.
12. **Equations.** If you are submitting your manuscript as a Word document, please ensure that equations are editable. More information about [mathematical symbols and equations](#).
13. **Units.** Please use [SI units](#) (non-italicized).

Using Third-Party Material

You must obtain the necessary permission to reuse third-party material in your article. The use of short extracts of text and some other types of material is usually permitted, on a limited basis, for the purposes of criticism and review without securing formal permission. If you wish to include any material in your paper for which you do not hold copyright, and which is not covered by this informal agreement, you will need to obtain written permission from the copyright owner prior to submission. More information on [requesting permission to reproduce work\(s\) under copyright](#).

Submitting Your Paper

This journal uses Routledge's [Submission Portal](#) to manage the submission process. The Submission Portal allows you to see your submissions across Routledge's journal portfolio in one place. To submit your manuscript please click [here](#).

If you are submitting in LaTeX, please convert the files to PDF beforehand. The PDF should be uploaded as the "Manuscript - with author details"/"Manuscript - anonymous" file. You will also need to upload your LaTeX source files, which should be uploaded as a single zip file alongside your submission and marked as "LaTeX Source Files".

Please note that *Qualitative Research in Psychology* uses [Crossref™](#) to screen papers for unoriginal material. By submitting your paper to *Qualitative Research in Psychology* you are agreeing to originality checks during the peer-review and production processes.

On acceptance, we recommend that you keep a copy of your Accepted Manuscript. Find out more about [sharing your work](#).

Data Sharing Policy

This journal applies the Taylor & Francis [Basic Data Sharing Policy](#). Authors are encouraged to share or make open the data supporting the results or analyses presented in their paper where this does not violate the protection of human subjects or other valid privacy or security concerns.

Authors are encouraged to deposit the dataset(s) in a recognized data repository that can mint a persistent digital identifier, preferably a digital object identifier (DOI) and recognizes a long-term preservation plan. If you are uncertain about where to deposit your data, please see [this information regarding repositories](#).

Authors are further encouraged to [cite any data sets referenced](#) in the article and provide a [Data Availability Statement](#).

At the point of submission, you will be asked if there is a data set associated with the paper. If you reply yes, you will be asked to provide the DOI, pre-registered DOI, hyperlink, or other persistent identifier associated with the data set(s). If you have selected to provide a pre-registered DOI, please be prepared to share the reviewer URL associated with your data deposit, upon request by reviewers.

Where one or multiple data sets are associated with a manuscript, these are not formally peer-reviewed as a part of the journal submission process. It is the author's responsibility to ensure the soundness of data. Any errors in the data rest solely with the producers of the data set(s).

Publication Charges

There are no submission fees, publication fees or page charges for this journal.

Color figures will be reproduced in color in your online article free of charge. If it is necessary for the figures to be reproduced in color in the print version, a charge will apply.

Charges for color figures in print are £300 per figure (\$400 US Dollars; \$500 Australian Dollars; €350). For more than 4 color figures, figures 5 and above will be charged at £50 per figure (\$75 US Dollars; \$100 Australian Dollars; €65). Depending on your location, these charges may be subject to local taxes.

Copyright Options

Copyright allows you to protect your original material, and stop others from using your work without your permission. Taylor & Francis offers a number of different license and reuse options, including Creative Commons licenses when publishing open access. [Read more on publishing agreements.](#)

My Authored Works

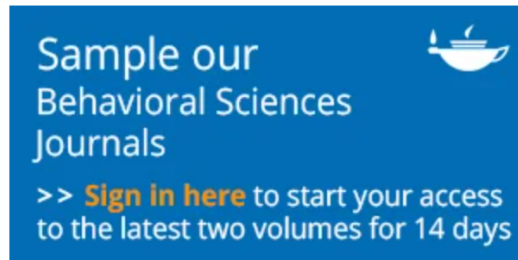
On publication, you will be able to view, download and check your article's metrics (downloads, citations and Altmetric data) via [My Authored Works](#) on Taylor & Francis Online. This is where you can access every article you have published with us, as well as your [free eprints link](#), so you can quickly and easily share your work with friends and colleagues.

We are committed to promoting and increasing the visibility of your article. Here are some tips and ideas on how you can work with us to [promote your research](#).

Queries

If you have any queries, please visit our [Author Services website](#) or contact us [here](#).

Updated 28th October 2024



Appendix N

Consolidated criteria for Reporting Qualitative research checklist (COREQ)

COREQ (Consolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
<i>Personal characteristics</i>			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	94-95
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	90
Occupation	3	What was their occupation at the time of the study?	90
Gender	4	Was the researcher male or female?	90
Experience and training	5	What experience or training did the researcher have?	90
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	n/a
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	n/a
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	90
Domain 2: Study design			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	89-90
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	92
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	92-94
Sample size	12	How many participants were in the study?	92-94
Non-participation	13	How many people refused to participate or dropped out? Reasons?	n/a
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	92-94
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	n/a
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	93-94
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	n/a
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	n/a
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	92-95
Field notes	20	Were field notes made during and/or after the interview or focus group?	n/a
Duration	21	What was the duration of the interviews or focus group?	n/a
Data saturation	22	Was data saturation discussed?	95
Transcripts returned	23	Were transcripts returned to participants for comment and/or	no

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	95
Description of the coding tree	25	Did authors provide a description of the coding tree?	Extended methods
Derivation of themes	26	Were themes identified in advance or derived from the data?	94-95
Software	27	What software, if applicable, was used to manage the data?	91 and 95
Participant checking	28	Did participants provide feedback on the findings?	no
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	yes (91)
Data and findings consistent	30	Was there consistency between the data presented and the findings?	yes
Clarity of major themes	31	Were major themes clearly presented in the findings?	95-110
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	yes

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.

Appendix O

Ethical approval letter from UEA FMH S-REC



University of East Anglia
Norwich Research Park
Norwich. NR4 7TJ

Email: ethicsmonitor@uea.ac.uk
Web: www.uea.ac.uk

Study title: A Multimodal Critical Discourse Analysis of #anxiety and #highfunctioning anxiety Content on TikTok: Exploring the Construction of Anxiety.

Application ID: ETH2324-0123

Dear Amber,

Your application was considered on 12th March 2024 by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee).

The decision is: **approved**.

You are therefore able to start your project subject to any other necessary approvals being given.

If your study involves NHS staff and facilities, you will require Health Research Authority (HRA) governance approval before you can start this project (even though you did not require NHS-REC ethics approval). Please consult the HRA webpage about the application required, which is submitted through the [IRAS](#) system.

This approval will expire on **1st September 2025**.

Please note that your project is granted ethics approval only for the length of time identified above. Any extension to a project must obtain ethics approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) before continuing.

It is a requirement of this ethics approval that you should report any adverse events which occur during your project to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) as soon as possible. An adverse event is one which was not anticipated in the research design, and which could potentially cause risk or harm to the participants or the researcher, or which reveals potential risks in the treatment under evaluation. For research involving animals, it may be the unintended death of an animal after trapping or carrying out a procedure.

Any amendments to your submitted project in terms of design, sample, data collection, focus etc. should be notified to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) in advance to ensure ethical compliance. If the amendments are substantial a new application may be required.

Approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) should not be taken as evidence that your study is compliant with the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018. If you need guidance on how to make your study UK GDPR compliant, please contact the UEA Data Protection Officer (dataprotection@uea.ac.uk).

Please can you send your report once your project is completed to the FMH S-REC (fmh.ethics@uea.ac.uk).

I would like to wish you every success with your project.

On behalf of the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee)

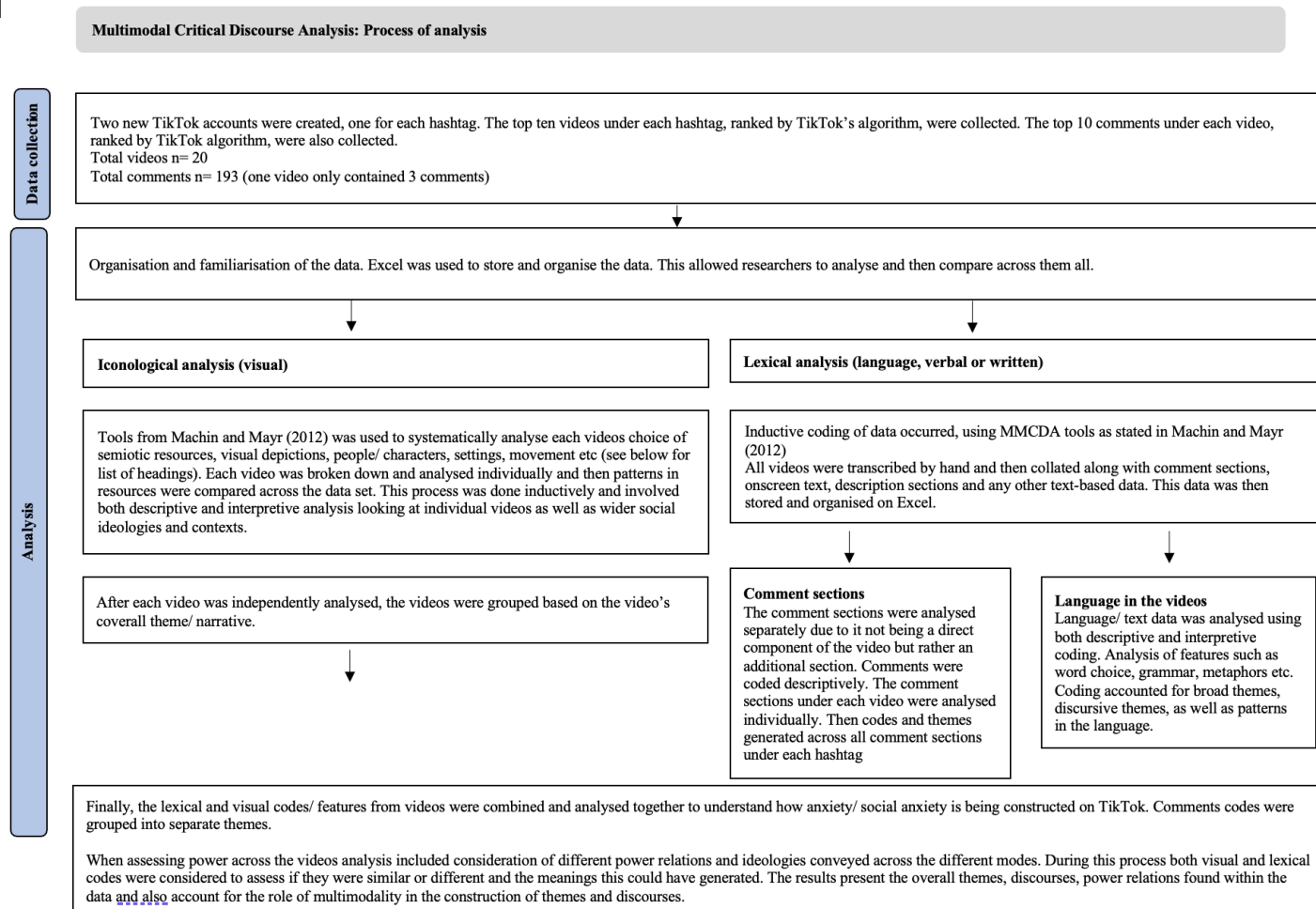
Yours sincerely,

Dr Paul Linsley

Appendix P

Flow diagram illustrating process of analysis

Figure P1
Flow diagram



Appendix Q

Screenshot extract from excel sheet illustrating initial coding process

Overall theme	Person	Gender	number of people	Representing creator	ways of talking: loud/ soft/breathiness/	Personalisation or impersonalisation	Individualisation or collectivisation	Specification and generalization	use of honorifics
POV/ what anxiety looks like	lay person	Female	1	No direct gaze, making no demand to the viewer, no response is expected and instead the video is seen as information (Machin and Mayre, 2012). This also instils a degree of separation and distance from the viewer, juxtaposed with the intimacy of raw emotion and being invited into personal spaces. Suggests that this is something people experience on their own, we are not	higher pitch voice, but soft- connotes ideas of weakness and vulnerability- emotion in her voice. The high pitch connotes ideas of urgency and	See transcription- visually in this video there is some degree of personalisation as the individual is showing their face and identity so there is some	Use of collective pronouns - suggestive of collective bringing closer together. The groups that feel humanised in this video through visual images i.e being	Again similar to the previous point the creator is specified but the use of collective pronouns connotes a generalisation	n/a
5 signs of anxiety	Expert	female	1	Dr. (access to power and authority). Seated across, leaning into us and looking down. This stance suggests that she is not "one of us" but rather someone who has power and authority (credibility) expertise to help "us". Use of counting, numbers on the screen helping us follow something that an expert is saying. Put together/make up etc combined with the clinical setting suggests a degree of professionalism.	Low pitch, steady and confident also somewhat loud (not shouting) but confidently spoken- formal and objective connotes ideas that what she is saying holds weight and importance. Staccato- type articulation with little tension and with a deep tone of voice, which as suggested in the Machin and	See transcription- visually there is some degree of personalisation as the individual is showing their own face and identity so there is some ownership and personalisation.	Use of pronouns suggestive of otherness. Visually the speaker is seen as different from those with anxiety through honorifics.	The use of pronouns suggestive of otherness - also highlighting her role as a doctor again highlighting an otherness	Yes- suggest a degree of seniority or a role that requires a degree of respect. The honorific makes the speaker appear more important and authoritative.
What is anxiety and how to manage it	expert	female	1	The creator/ speaker is represented as someone who is a credible expert in the area. We are not told of her credentials, however, through her language and the context (setting) we can infer that she has some expert knowledge on anxiety. Furthermore, the creator is represented as a professional women by her clothes and body language. The camera angles and distance also suggest that we as viewers should listen to what she has to say.	very low pitch and confident in the tone of voice- connotes ideas about importance as well as suggests what she is saying is noteworthy and reliable. Very relaxed and no tension.	See transcription- visually there is some degree of personalisation as the individual is showing their own face and identity so there is some ownership and personalisation.	individualisation - we see the speaker as an identifiable person	The use of pronouns suggestive of otherness - very general no one is identified	The setting provides a sense of status - suggest a degree of seniority or a role that requires a degree of respect
What anxiety can look like	lay person	female	1	Young, white, meeting western beauty standards. Gives viewers a sense of clean aesthetic. These videos aren't showing "everyday" joe blogs experiencing anxiety but rather beautiful young women who may be anxious, or talking about what its like to be anxious. I'm not sure if this is an attempt to make them more relatable or rather a way of glorifying anxiety? Who is this targeting and to what effect? Use of gaze - slow looking up - meant to capture- softness to her gaze as well as the airbrushed	song - legato - longer smoother notes = suggests ideas of "dewling on emotion" uncertainty and less authority" (Machin and Mayre, 2012)	See transcription- visually there is some degree of personalisation as the individual is showing their own face and identity so there is some ownership and personalisation.	More individualisation as we can see her face	see comments	n/a
What anxiety looks like	lay person	female	1	White female, makeup. Again similar to previous videos is in line with western beauty standards. In fairly relaxed clothing. Begins by nodding (combined with eye contact) Holds hands up below where the text is to suggest she is holding and brining users awareness to the text on screen. See Gaze, angle and distance for more.	n/a	See transcription - Visually there is some degree of personalisation as the individual is showing their own face and identity so there is some ownership and personalisation.	Individualised and personalised as she is identifiable	generalised	n/a

Appendix R

Amendment to ethics for new hashtag



University of East Anglia
Norwich Research Park
Norwich. NR4 7TJ

Email: ethicsmonitor@uea.ac.uk
Web: www.uea.ac.uk

Study title: A Multimodal Critical Discourse Analysis of #anxiety and #highfunctioninganxiety Content on TikTok: Exploring the Construction of Anxiety.

Application ID: ETH2324-2084 (significant amendments)

Dear Amber,

The amendment to your study was considered on 15th April 2024 by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee).

The decision is: **approved**.

You are therefore able to start your project subject to any other necessary approvals being given.

If your study involves NHS staff and facilities, you will require Health Research Authority (HRA) governance approval before you can start this project (even though you did not require NHS-REC ethics approval). Please consult the HRA webpage about the application required, which is submitted through the [IRAS](#) system.

This approval will expire on **1st September 2025**.

Please note that your project is granted ethics approval only for the length of time identified above. Any extension to a project must obtain ethics approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) before continuing.

It is a requirement of this ethics approval that you should report any adverse events which occur during your project to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) as soon as possible. An adverse event is one which was not anticipated in the research design, and which could potentially cause risk or harm to the participants or the researcher, or which reveals potential risks in the treatment under evaluation. For research involving animals, it may be the unintended death of an animal after trapping or carrying out a procedure.

Any amendments to your submitted project in terms of design, sample, data collection, focus etc. should be notified to the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) in advance to ensure ethical compliance. If the amendments are substantial a new application may be required.

Approval by the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee) should not be taken as evidence that your study is compliant with the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018. If you need guidance on how to make your study UK GDPR compliant, please contact the UEA Data Protection Officer (dataprotection@uea.ac.uk).

Please can you send your report once your project is completed to the FMH S-REC (fmh.ethics@uea.ac.uk).

I would like to wish you every success with your project.

On behalf of the FMH S-REC (Faculty of Medicine and Health Sciences Research Ethics Subcommittee)

Yours sincerely,

Dr Paul Linsley

Appendix S

Example of the analytic process and descriptions of levels of analysis

Table 1R

Table illustrating the levels of analysis, with examples

Level of analysis	Descriptions	Example 1	Example 2
Depictions	This is an overarching representation/ illustration of the content of the video/ intended aim. The depictions are not representative of discourses but rather the overall theme of the video.	Lived experience: This depicts anxiety through the creators own lived experience.	Psychoeducation: This broadly depicts social anxiety through process of educating viewers about anxiety
Discursive themes	Re-occurring themes about anxiety that is being constructed by discourse	Hidden emotional turmoil: Throughout this discursive theme anxiety is presented as something that is and should be hidden from the outside world but also as something that causes a great deal of emotional suffering.	Define and Conquer: This discourse portrays social anxiety through attempts to find a definition, explain what it is and then find strategies to overcome social anxiety. Throughout this discursive theme social anxiety was discussed through an internal

			mental process, such as thoughts and individuals were then ideologically positioned to be able to control social anxiety as it was within their head.
Codes	These are inductively generated ideas found from the data, guided by tools and methods proposed by Machin and Mayr (2023)	Multimodal: Lack of gaze, private spaces not typically exposed to outside world, creator crying, emotive slow music, angle and low lighting demonstrating a vulnerability, visual isolation one creator on their own, visual metaphor.	Multimodal: Use of on-screen text helps portray internal thoughts to viewers, podcast/ setting provides a sense of credibility, visual positioning, lighting-professionalism, angle and gaze also help position speakers in position of authority and provides weight to information they share.
		Lexical: Persuasion into action, Overlexicalisation, use of pronouns (collectivisation) generates sense of connection and relatability, ideas around	

internalised mental health, people
being silenced historically now
needing to break free, unspoken
suffering, trapped by anxiety,
hiding emotional pain, managing
alone.

Lexical: use of quotation marks to
illustrate internal thoughts, use of
pronouns to help align with the
audience. Use of definitive
statements helps to persuade and
provides a sense of credibility.
Illustrating anticipation, worry
and predicting the future,
reinforces the mental process of
anxiety. Individual responsibility
is reinforced through combination
of pronouns and emphasis on the
fact that anxiety is something you
can control, as it is something
internal. Functional honorifics
helps provide credibility and
weight to the information.

Appendix T

Codebook for comments under #anxiety

Table 1T

Codebook for #anxiety comments

Theme	codes
Anxiety as a medical disease	Disease Sharing diagnosis Symptoms of anxiety
	Treatments for anxiety Wishing for a cure
Anxiety as a normal emotion	This is normal Anxiety is an emotion
Community support and help	Seeing if others have the same experiences Self-disclosure Sharing experiences of anxiety and knowledge Tagging friends Seeking and providing help/advice
Disagreeing with video content	Challenging and disagreeing
Lifelong impact and misunderstanding	Anxiety getting worse Difficulties because of anxiety Feeling tired and exhausted Different strengths of anxiety Other people don't understand Chronic and enduring
Relating and self-identifying	Playful responses after relating Relating to video Self-diagnosing Wondering if they have anxiety Sharing similar experiences

Appendix U

Codebook for comments under #socialanxiety

Table 1U

Codebook for #socialanxiety comments

Theme	codes
Sharing support and solidarity	Asking questions Seeking help and advice Sharing of experiences, knowledge and sharing content with friends Showing support towards the creator
Relating to the video	Relating through shared experiences Statements that they relate to content Self-identification/ self-diagnosing
Comical and engagement with content	Commenting on content of video and unrelated comments Finding video comical
Making sense of what is social anxiety	Those who don't have social anxiety don't understand That's not social anxiety Positive beliefs about anxiety Video is oversimplifying Differences in neurodiversity Normalisation
Challenging video content	Questioning video content Finding video unhelpful Making fun of creator Disagreeing with video content

Glossary²

Power: The ability to influence, control or direct the beliefs and behaviour of others

Neoliberalism: An economic and political ideology that promotes free-market capitalism, deregulation, privatisation, and reducing the role of government in the economy.

Capitalism: An economic system in which the means of production are privately owned and operated for profit.

Lexical: This refers to the text-based data including words and language

Overlexicalisation: This is the repetitive use of words or its synonyms in a text that all mean the same thing.

Rhetorical devices: These are strategies or techniques used in written text to help emphasis, persuade and influence, such as metaphors or similes.

Personification: This is the process of providing human qualities and characteristics to abstract or non-human concepts.

Abstractions: This is where the concrete details about an event or process are reduced or replaced by generalisations or broader concepts. This helps to simplify complex ideas down to just simple generalisations.

Heuristic (availability): This refers to the way that the information that is most easily available to us will become the way in which we are more likely to understand the world.

Moral panic: This is widespread worry regarding fear that the values and principles of society made be in jeopardy. This is usually exaggerated and results in disproportionate anxiety over an event.

Honorifics: Titles or words often reflecting social status such as “Dr” or “Mr”

² Most terms included here are in relation to the empirical paper and are derived from Machin and Mayr (2023).

Hegemony: This is a concept to describe way in which dominant groups in society succeed in persuading subordinate groups to accept the dominant moral, political and cultural values. Causing the subordinate groups to then continue to maintain the values.