Bolstering Youth Mental Health and Wellbeing: An Exploration on Acceptance and Commitment Therapy, Possible Selves and Structured Activity

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Abstract

Background: Prevalence rates of youth mental health difficulties and deterioration in wellbeing are of paramount concern, particularly in light of the Coronavirus (COVID-19) pandemic, prompting calls for prevention and early intervention. The systematic review investigated the efficacy of Acceptance and Commitment Therapy (ACT) for psychological outcomes with youth. The empirical project, underpinned by possible selves theory, sought to describe and explore youths' future possible selves, engagement in structured activity and wellbeing during the COVID-19 pandemic.

Method: The systematic review narratively synthesised peer-reviewed literature on ACT interventions with youth, including outcomes on psychological symptoms, distress, wellbeing and quality of life. Secondary aims investigated the efficacy of ACT on overall psychological flexibility. The empirical study utilised a cross-sectional design, with an online survey measuring possible selves, wellbeing and structured activity.

Results: The systematic review included eighteen studies. Overall, ACT demonstrated improvements on outcomes however comparisons between ACT and control groups were less favourable. However, ACT performed similarly, but not superior, to other well-established interventions. Methodological rigour was generally low and limits conclusions. The empirical study recruited 120 participants, who reported predominantly low wellbeing. Individuals less hopeful and with lower expectations for their future since the onset of the COVID-19 pandemic had significantly lower wellbeing. Positive relationships were found between increased optimism for hoped-for selves, increased engagement in structured activity and

higher levels of wellbeing. Exploratory analyses of moderation and mediation models, underpinned by possible selves theory, were not supported.

Conclusions: The COVID-19 pandemic has detrimentally impacted on youth's future possible selves and wellbeing. Supporting wellbeing will be vital to buffer against longer term difficulties. Interventions aimed at supporting young people to foster optimism for the future and engage in structured activity may be beneficial for enhancing wellbeing. ACT may offer a promising intervention to support youth wellbeing. Future research is warranted.

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CHAPTER ONE

Introduction to the Thesis Portfolio

Introduction to the Thesis Portfolio

This chapter provides an overview of some of the key theories and concepts discussed throughout the thesis portfolio.

Youth

The World Health Organisation (WHO) define individuals aged between 15 and 24-years as 'youth' (WHO, nd). This is a time of rapid physical, cognitive, behavioural, social and emotional developments (Azzopardi et al., 2019; Blakemore & Choudhury, 2006). Indeed, radical transformations in brain maturation and synaptic pruning highlight this distinct developmental period (Purves & Lichtman, 1980; Whitford et al., 2007). Compared to adults, for example, differing cognitive approaches are employed during social decision making (Blakemore & Choudhury, 2006). It is also a time of self development, where identity and self-concept become increasingly well-defined, coherent and integrated (Erikson, 1963; Steinberg & Morris, 2001). Autonomy and independence also increase, with young people navigating new experiences, such as starting university or fulltime employment, leaving the family home and longer-term romantic commitments (Arnett et al., 2014) Youth certainly is a time fraught with instability and social, emotional and cognitive transitions (Arnett et al., 2014; Power et al., 2020). To this end, efforts on researching and understanding how best to support youth in this distinct development phase, independent to adults and children, is important.

Positive psychology

Positive psychology focuses upon individual strengths, wellbeing and virtues (Sheldon & King, 2001). Historically, research on understanding factors related to deficits and pathology has dominated the literature. This negative bias fails to adopt a holistic perspective on the whole of human nature (Peterson, 2009). Positive psychology represents a shift in focus, whereby research efforts have been driven in desire to balance the field (Kluemper et al., 2009). There is increasing recognition that human functioning cannot just be viewed through problem focused lenses (Sheldon & King, 2001). Indeed, factors related to thriving, where individuals report lives with happiness and satisfaction (Myers, 2000), are also of importance. Moreover, mental health and mental ill-health are argued to be on related, yet distinct, continua (Keyes, 2005). One continuum relates to the presence or absence of mental ill-health, and the other, the presence or absence of mental health (Keyes, 2005). Keyes (2005) proposed a holistic state of mental health, which forms a unipolar dimension between 'flourishing' and 'languishing'. Whereby flourishing cannot purely be accounted for by an absence of mental health difficulties (Keyes, 2010). Increased impairments in chronic illness and poor psychosocial functioning characterise those who are not flourishing (Keyes, 2007). Yet, historical focus has been on addressing mental ill-health rather than understanding and boosting factors related to psychological wellbeing, a key component of flourishing (Schotanus-Dijkstra et al., 2016). Psychological wellbeing incorporates both hedonic and eudaimonic wellbeing (Ryan & Deci, 2001). The former, incorporating life satisfaction, happiness and positive affect (Diener, 1984), and the latter, autonomy, purpose in life, self-acceptance, personal growth, mastery and positive relations (Ryan & Deci, 2001; Ryff, 1989). To address the disparity on research focus, there

has been an upsurge in the field of positive psychology. It is suggested that psychology should become more proactive instead of reactive, helping to promote wellbeing to buffer against future mental health difficulties (Terjesen et al., 2004). The present thesis therefore aims to address factors related to psychological wellbeing and not purely negative outcomes.

Youth mental health and wellbeing

There has been increasing acknowledgment and interest in youth mental health and wellbeing, with a recent proliferation of research in the field (Power et al., 2020). The World Health Organization (WHO, 2004) define overall mental health as a sense of wellbeing, where individuals feel able to cope with life stressors, are productive in their work, aware of their abilities and feel able to contribute to the wider community. The likelihood of developing persistent and comorbid mental health difficulties midlife increase when the onset of mental health difficulties is earlier in life (Caspi et al., 2020). Inversely, the longitudinal outcomes are more positive for individuals who have not experienced negative mental health in youth (Caspi et al., 2020). This emphasises the critical time period in supporting youth in the prevention of longer lasting difficulties into adulthood. Young people in the United Kingdom (UK) report relatively low wellbeing in comparison with other countries, with ongoing deterioration (Gromada et al., 2020; Department for Education, 2020). Wellbeing and mental health support for young people is at the forefront of UK government policy (Department of Health and Social Care and Department for Education, 2017). There is a call for prevention and intervention initiatives that are tailored for youth, to address their distinct developmental needs.

Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT), considered a third wave Cognitive Behavioural Therapy (CBT), has been gathering momentum in research interest and clinical applications since Hayes et al.'s (1999) first main publication introducing ACT. In keeping with the notion of flourishing, ACT aims to support individuals to optimise their potential for a life that is full, rich and meaningful (Ciarrochi & Kashdan, 2013). The underlying pragmatic philosophy in ACT is functional contextualism (Biglan & Hayes., 1996), the goal of which involves the accurate prediction and influence of behaviour or events (Hayes, 1993; Biglan, 2004). This is informed by Relational Frame Theory (RFT), which focuses on language and cognition along with behaviour analysis. It is concerned with how language pragmatics provide verbal rules that guide human behaviour (Hayes et al, 2012). RFT is based on the notion that humans create relations or links using language that is not explicitly trained, which are crucial for behavioural functions, such as fear and avoidance, to be transferred (Hayes et al, 2012).

ACT posits that distress arises due to psychological inflexibility, with one of the key components, experiential avoidance, argued to underlie most suffering (Hayes & Melancon, 1989). Experiential avoidance refers to attempts to escape, control or supress unwanted private experiences (Hayes et al, 2012). Attempts to control and avoid difficult thoughts and feelings are highlighted as counter-productive, and instead paradoxically exacerbate difficulties (Cullen, 2008; Wenzlaff & Wegner, 2000). Here, acceptance and openness toward the emotional component of human experience is encouraged instead, with curiosity and compassion (Hayes et al, 2012). Psychological inflexibility consists of six key components: cognitive fusion, experiential avoidance, dominance of the conceptualised past and future,

attachment to the conceptualised self, lack of or clarity of values and unworkable action (Harris, 2009). The inverse, termed the ACT 'hexaflex', aims to enhance psychological flexibility through directly addressing these six components through: cognitive defusion, acceptance, contact with the present moment, self-as-context, values and committed action (Harris, 2009; Hayes et al., 2012).

Possible Selves Theory

The self-concept refers to multifaceted theories about oneself, that consist of personal and social cognitive representations of the self from the past, current and future (Oyserman, 2001). The self-concept functions to self-regulate and enhance motivation, through organising experience, accessing archived autobiographical memories and constructing versions of the self (Markus & Wurf, 1987; Oyserman, 2001). Self-regulation can be defined as process whereby individuals guide thoughts, affect and behaviours towards the achievement of goals (Frazier et al., 2021). Moreover, throughout the life span it has been associated to a number of favourable psychological and physical outcomes along with adaptive skills (Wrosch, 2011). The self-concept has been defined as dynamic and responsive to environmental changes. Therefore, it has the ability to motivate, regulate and mediate ongoing behaviour (Markus & Warf, 1987).

Possible selves represent the future oriented component of the self-concept. They consist of hypothetical imaginings of what one hopes to become, such as 'a successful entrepreneur' or 'a caring friend', what one expects to become, such as 'a call centre advisor' or 'a loving parent' and also what one fears becoming, such as 'homeless' or 'a lonely widow'. Possible selves are individualistic, although influenced socially, and express the hopes, aspirations, expectations and fears of how

the future self could be. The content of possible selves are suggested to reflect the individuals life phase, culture, racial-ethnic and socio-economic contexts (Oyserman & James, 2011). Possible selves are argued to link the self-concept to motivation and provide the driving force and regulation of behaviour (Markus & Nurius, 1986; Oyserman et al., 2004).

Individuals can generate a variety of possible selves (Rathbone et al., 2016; Cross & Markus, 1991) which have been linked to motivate behaviour in a variety of domains, including health-related behaviours (Murru & Ginis, 2010). Individuals who were able to imagine a successful future and provide elaborate and specific descriptions of the future self were more likely to attain academic achievements (Cadely et al., 2011; Leondari et al., 1998). Possible selves have been associated with enhanced wellbeing and life satisfaction (see Massey et al., 2008, for a review). Furthermore, articulating hoped-for possible selves has been associated with increased optimism leading to improved wellbeing (Gonzales et al., 2001). Given that youth is a period of time for rapid developments of the self and identity, possible selves represent an important consideration for this age group.

CHAPTER TWO

Systematic Review

This paper has been prepared for submission to the Journal of Contextual Behavioural Sciences. Please see Appendix A for the journal's guidance to authors.

The Efficacy of Individual Acceptance and Commitment Therapy Interventions for Youth on Psychological Symptoms, Distress, Wellbeing and Quality of Life: A Systematic Review

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Abstract

Alarming rates of mental health difficulties in youth populations call for evidence-based interventions appropriate to their distinct developmental needs. Over the past decade, there has been a proliferation of Acceptance and Commitment Therapy (ACT) intervention research, with systematic reviews and meta-analyses synthesising the literature for adult and child populations. However, little is known regarding the effectiveness of ACT for youth populations. A systematic review of peer-reviewed literature was conducted to explore efficacy of individual ACT interventions on psychological symptoms, distress, wellbeing and quality of life (QoL). Secondary aims were to investigate improvements in psychological flexibility, the proposed mechanism of change. There were no exclusion criteria regarding study design or difficulty studied. A narrative synthesis approach summarised findings from eighteen studies, with most investigating ACT within student populations. Results indicated overall improvements in psychological symptoms, distress, wellbeing and QoL, however, methodological quality of included studies was generally low. Few studies compared ACT to another well-established treatment. Preliminary findings suggest that ACT may perform similarly to, but not beyond, well-established treatments. Comparisons to waitlist control groups were not always favourable towards ACT. Psychological flexibility did not typically improve beyond control groups. However, no definitive conclusions can be drawn due to the limited evidence base and methodological quality. Further research is required with increased methodological rigour. Nonetheless, emerging evidence indicates that ACT may hold promise for use within youth populations.

Keywords: *Acceptance and Commitment Therapy, Youth, Interventions, Psychological Flexibility, Systematic Review*

Highlights:

- There is a dearth of high-quality studies exploring the efficacy of individual, face to face ACT interventions with youth populations
- ACT appears to perform similarly to other well-established treatments, such as CBT
- Further research and RCTs with robust methodological rigour are recommended
- ACT may be a promising intervention for youth

Introduction

Youth mental health

The World Health Organization (WHO) defines 'youth' as individuals within the 15 to 24-year age group (WHO, nd). Over the past 15 years, mental health difficulties in children and young people have increased in prevalence, from one in ten young people (Green et al., 2005) to one in eight (Sadler et al., 2017). More recently, a large-scale UK based study exploring the prevalence of mental health difficulties in adolescents within educational settings found approximately two out of five young people scored above cut-offs for conduct problems, emotional disorders and hyperactivity (Deighton et al., 2019).

Developmentally, adolescence is a complex period with many emotional, social and cognitive changes (Institute of Medicine [IOM] & National Research Council [NRC], 2015). As adolescents progress into young adulthood, a period bridging the gap to adulthood, a number of psychological changes occur, with structural and functional brain maturation alongside increased responsibilities and life challenges (IOM & NRC, 2015). It is argued that youth, particularly those aged 18 to 25, have entered a new developmental stage of life, fraught with prolonged instability and transition (Arnett, 2015). Examples of such transitions are leaving home, starting university, employment, marriage and becoming increasingly independent.

Adolescence and early adulthood coincide with a peak in the onset of mental health disorders and subsequent need for care (McGorry et al., 2011). Prevalence rates of mental health difficulties appear to increase as a young person develops, with research suggesting a six-fold increase between the ages of four to 24

(Pitchforth et al., 2019). Evidence suggests that not only do mental health difficulties disproportionately impact young people, but they may also struggle to access services when needed most, with approximately one fifth experiencing a mental health condition accessing professional support (Australian Institute of Health and Welfare [AIHW], 2007).

Student mental health

Young people aged 18 to 24 years account for approximately two-thirds of the UK higher education student population (Higher Education Statistics Agency [HESA], 2021). Students attending university often navigate a variety of academic, financial, interpersonal and cultural pressures (Baik et al., 2019; Beiter et al., 2015; Coiro et al., 2017; Richardson et al., 2017). General wellbeing can become strained once starting university, which may not return to pre-university levels throughout (Bewick et al., 2010). In fact, research suggests that university students have significantly higher levels of psychological distress than the general population (Stallman, 2010). Approximately one third of higher education students surveyed reported psychological distress at clinical levels (Bewick et al., 2008). Indeed, depression, anxiety and stress are amongst the most commonly reported difficulties experienced by university students (Krumre et al., 2010; Regehr et al., 2013).

Over a two-year period, research exploring the prevalence of psychological difficulties found that over half of university students experienced at least one mental health difficulty with less than half receiving treatment (Ziven et al., 2009). This is consistent with epidemiological studies suggesting up to half of students would meet diagnostic criteria for a psychological disorder per year (Blanco et al., 2008).

United Kingdom (UK) policy changes in recognition of youth mental health

In the UK, the government released a green paper on transforming the provision for young people's mental health (Department of Health and Social Care and Department for Education, 2017). Included within this is recognition on improving mental health support for young people aged 16 to 25 years. This support is suggested to be within student mental health in further and higher education establishments alongside local authority and health services. This was followed up by a mental health strategy published by the Coalition Government, aimed at promoting public wellbeing, prevention of mental health difficulties and early intervention (Department of Health, 2011).

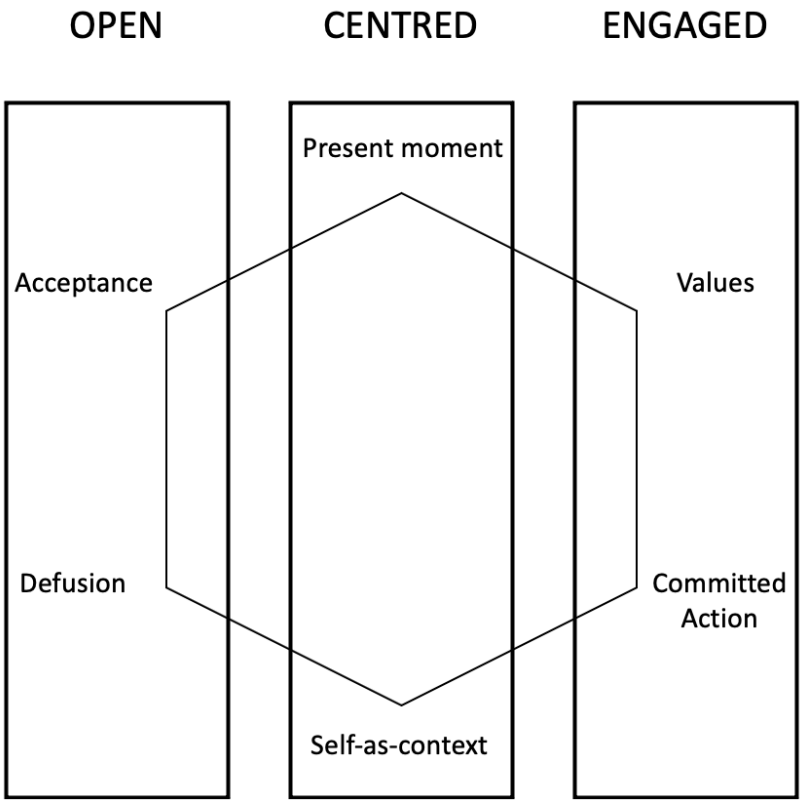
Acceptance and Commitment Therapy

Acceptance and Commitment Therapy (ACT) may hold promise for prevention and intervention with youth populations. Considered a third wave Cognitive Behavioural Therapy (CBT), ACT is a transdiagnostic model based upon common core processes suggested to be involved in psychological suffering (Hayes et al., 2012). It is focused on fostering acceptance of difficult emotions and defusing from cognitions, as opposed to cognitive restructuring typically used in CBT (Arch & Craske, 2008). ACT emphasises addressing the function of thoughts rather than the literal content (Hayes, 2004).

Based upon the pragmatic philosophy of functional contextualism and the theoretical underpinnings of relational frame theory (RFT; Hayes et al., 2001), ACT focuses upon language, cognition and behaviour analysis (Biglan & Hayes, 1996). Difficulties are suggested to arise due from psychological inflexibility. Its counterpart, psychological flexibility, involves: cognitive defusion, acceptance,

flexible attention to the present moment, values, committed action and self-as-context (Hayes et al., 2012). These six components are grouped into what is known as the ACT hexaflex, which can be divided into three dyadic response styles, or functional units, termed *open*, *centred* and *engaged* (Figure 1; Hayes et al., 2012). Harris (2009) similarly combined the six psychological flexibility components into three dyads, aptly named the ACT Triflex. These three dyadic core processes are likened to three legs supporting a stool (Strosahl & Robinson, 2017). All three provide strength and support when functioning and properly aligned together. If one or more legs are weak or missing, this could impact the stability of the whole structure and could result in collapse, even under the lightest of loads (Hayes et al., 2012). Thus, emphasising the importance of incorporating all three-response styles in maintaining balance and psychological flexibility.

Figure 2.1
The three response styles of psychological flexibility (Hayes et al., 2012)



Note.
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The purpose of ACT is not on reducing symptoms or distress. Instead, it seeks to improve psychological flexibility through dropping the struggle with difficult thoughts and feelings to enable meaningful engagement with life, with reduced psychological symptoms suggested to be a by-product (Harris, 2009). Research investigating mechanisms of change indicate that improvements in psychological flexibility mediate the impact of ACT (Fledderus et al., 2013).

Evidence in adult populations

There has been a proliferation of ACT research in recent years contributing to a burgeoning of its evidence base. A recent systematic review and meta-analysis found nine out of ten ACT intervention studies with adults resulted in significant improvements to wellbeing when compared to control conditions (Stenhoff et al., 2020). Effect sizes were mostly moderate, however quality ratings varied due to methodological issues (Stenhoff et al., 2020). Öst (2014) reviewed 60 randomised control trials (RCTs) with a total of 4234 participants across the lifespan. It was concluded that ACT was not yet well established for any disorder however may be efficacious for a wide range of difficulties, such as chronic pain, depression, obsessive compulsive disorder (OCD), anxiety, drug abuse and workplace stress (Öst, 2014). Previous reviews have indicated that the quality of ACT intervention studies is typically low and suggest that ACT may not offer increased benefit beyond that of traditional CBT (Hoffman & Asmundson, 2008).

Evidence in child populations

Swain et al. (2015) investigated the efficacy of ACT interventions with children under the age of 18. Their systematic review suggested ACT might be viable as a treatment, however weaknesses in methodology limited conclusions. An updated systematic review indicated that ACT holds promise as an intervention for adolescent mental health (Harris & Samuel, 2020). Furthermore, a meta-analysis exploring the efficacy of ACT with children identified 14 RCT's (Fang & Ding, 2020). ACT significantly improved depression and anxiety outcomes compared to waitlist or treatment as usual (TAU). However, findings indicated no significant differences when comparing ACT to traditional CBT. For QoL and wellbeing outcomes, ACT outperformed waitlist control groups however performed similarly to TAU and CBT.

The present review

While there have been systematic reviews exploring the efficacy of ACT interventions with children (e.g., Fang & Ding, 2020; Swain et al., 2013; Swain et al., 2015), adolescents (Harris & Samuel, 2020) and adults (e.g., A-Tjak et al., 2015; Gloster et al., 2020), to the authors knowledge, there are no current reviews investigating its efficacy within a youth population. Given the developmental differences, numerous transitional pressures, increasing rates of mental health difficulties and recent focus on prevention, a systematic review on the effectiveness of ACT interventions for youth is warranted. This review aims to have sufficient breadth to identify studies researching in both clinical and non-clinical populations, and given ACT's transdiagnostic nature, irrespective of diagnosis or difficulty. The purpose of this review is to additionally provide recommendations to improve

methodological rigour of future ACT intervention studies.

Primary review question:

> Are ACT interventions effective for youth in improving the following outcomes: 1) psychological symptoms and distress, 2) wellbeing and QoL.

Secondary aims were to investigate the effectiveness of ACT in improving psychological flexibility outcomes, the proposed mechanism of change (Hayes et al., 2012), in youth. Investigating change processes can help address critiques of many psychological therapies, whereby there is a lack of understanding regarding the mechanisms of change (Hofmann & Hayes, 2019).

ACT is a transdiagnostic approach, aiming to promote psychological flexibility rather than symptom reduction. This places an emphasis on human thriving and prosperity, and not just psychopathology, which are considered vital for overall mental health (Hayes & Hofmann, 2017). Therefore, it was intentional to include a broad range of outcomes along the mental health continua (Keyes, 2005).

Method

The present review was conducted in accordance with the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA; Moher et al., 2009).

Protocol and Registration

The protocol for this review was registered with the International Prospective Register of Systematic Reviews (PROSPERO) on 28th October 2020 (CRD42020202381).

Search Strategy

Following several scoping searches, studies for inclusion were identified through systematic searches conducted on four bibliographic electronic databases: MEDLINE (Ovid), PsycINFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Scopus. The Journal of Contextual Behavioural Science (JCBS) was also hand searched, along with reference lists from included papers. Databases were initially searched from inception to 5th August 2020. An updated and final search was conducted on 3rd April 2021. The following search strategy was used: ("acceptance and commitment" OR “mindfulness based” OR defusion OR "cognitive fusion" OR "psychological flexibility" OR "psychological inflexibility") AND (youth OR adolescen* OR teen* OR "young people" OR "young person" OR "young adult" OR student).

Inclusion and Exclusion Criteria

Inclusion criteria encompassed the following: 1) primary intervention studies delivering ACT without any other treatment, of which must employ (and explicitly mention) at least one component from each of the three ACT response styles of *open, centred* and *engaged*; 2) treating participants with a mean age between 15 and 24 years old; 3) with the article prepared in an English language from a peer-reviewed journal; and 4) included at least one psychometrically valid outcome

measure on (a) psychological symptoms and/or (b) psychological distress and/or (c) QoL and/or (d) wellbeing. No specific inclusion criteria on presenting difficulties were incorporated to capture wide applications of ACT interventions in the literature.

The present review did not limit research designs to ensure maximum breadth. Individual case studies and case series were therefore included as they can provide detailed and clinically valuable accounts of the diverse applications of ACT. In addition, ACT is younger than traditional CBT, suggesting research may be at an earlier stage. There were no exclusion criteria regarding diagnosis or presentation of the participants (e.g., anxiety, depression, conduct disorder) or for the mode of delivery of the intervention (e.g., face to face, telephone, web or app based). The primary outcomes of interest related to psychological symptoms, distress, QoL and wellbeing. In addition, overall psychological flexibility outcomes, ACT's proposed mechanism of change, were of interest and extracted.

The review aimed to target interventions which incorporated as many components of the ACT hexaflex without being overly restrictive, given the flexible approach of ACT. Interventions were therefore operationalised as meeting ACT criteria if they incorporated at least one component from each of the three ACT response styles (*open, centred* and *engaged).* This meant that other therapies using similar techniques, such as mindfulness in mindfulness-based cognitive therapy (MBCT), were excluded.

Studies were excluded from the review if they: 1) were group interventions or treated parents/carers/significant others; 2) were reviews, meta-analyses or theoretical articles; 3) lacked at least one psychometrically valid measure; 4) did not

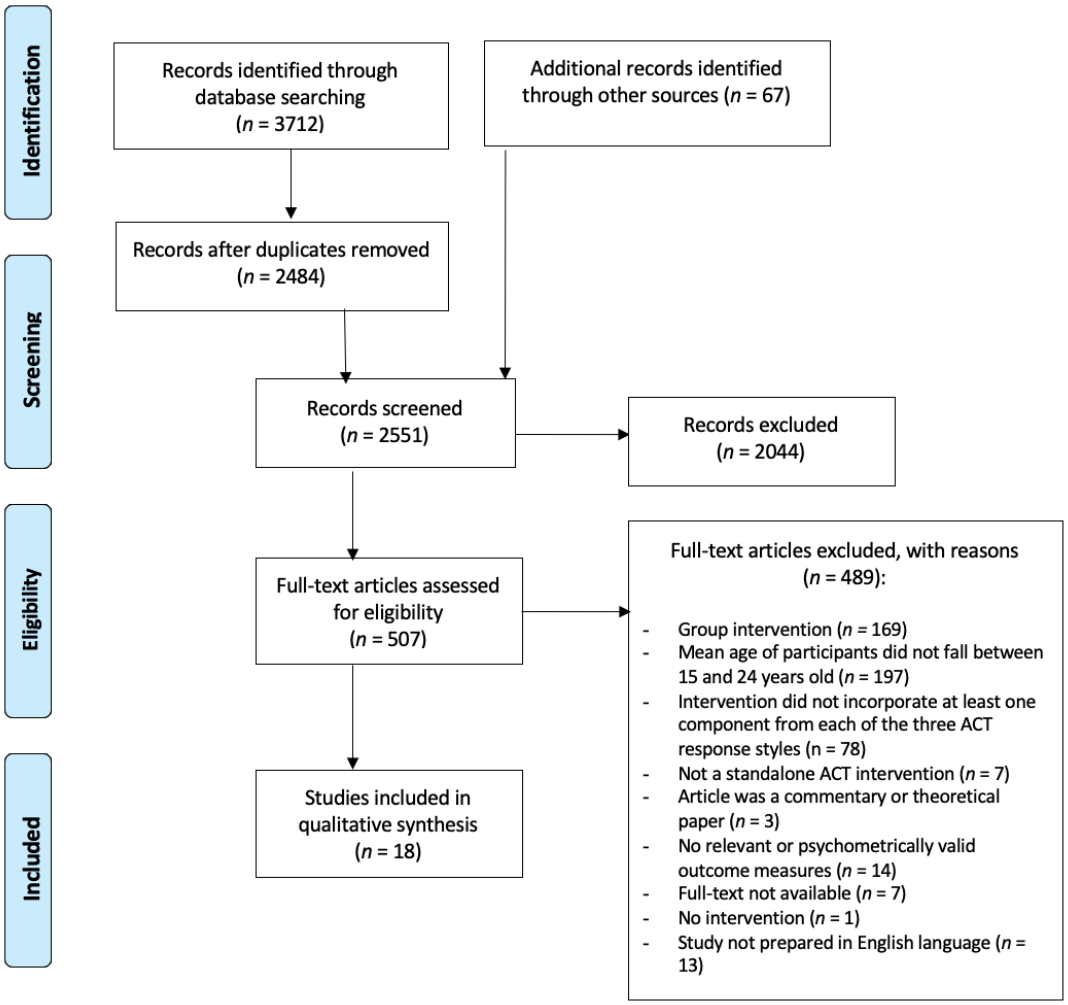
present any quantitative data or 5) included any other intervention to ACT. There were no exclusion regarding the type of difficulty being investigated.

Screening and Selection

Following removal of duplicates, the initial search yielded 2267 studies. An additional 67 studies were identified through hand searches of the JCBS and from the reference lists of included papers. The first author (JS) conducted the initial and updated searches and screened titles and abstracts for eligibility. A total of 507 full-text articles were screened against the inclusion and exclusion criteria. A second reviewer (KO) screened 20% of full-text articles against inclusion and exclusion criteria. The Kappa statistic was calculated at 0.64, suggesting moderate agreement (McHugh, 2012). Any discrepancies in ratings were resolved through discussion and consensus was established. Any other uncertainties on whether studies met eligibility criteria were discussed with a second (KO) and third reviewer (JH), and resolved. The updated search, conducted on 3rd April 2021, identified a further 217 studies. Of these studies, 80 abstracts and 35 full texts were screened, which identified two papers for inclusion. See Figure 2.1 for a PRISMA flow diagram of searches.

Figure 2.2

PRISMA flow diagram (Moher et al., 2009)



Data extraction

All included studies were extracted into a standardised coding spreadsheet. Data extracted included population characteristics (e.g., participant age, sample size), setting (e.g., country, clinical, non-clinical etc.), the area of interest, research design, control group, treatment duration, mode of delivery and outcomes. See Table 2.1 for an overview of key study characteristics.

Table 2.1

Key study characteristics, grouped by study design

Study author and year	Country	Area of Interest	Design	Control/ comparison	Sample N (% female)	% Drop out	Mean Age (range)	Population	Intervention format	Length
Kocovski et al. (2019)	Canada	Social Anxiety	RCT	Waitlist	117 (73.68%)	ACT = 20%; WL = 16%;	23.95 (17-51)	Non-clinical community	Self-help book	8-week reading schedule
Krafft et al. (2019)	USA	Anxiety and/or Depression	RCT	Simple Matrix App and waitlist	98 (65.7%)	ACT = 18%; Simple app = 27% WL = 16%;	HS = 24.57 (NR) SONA = 20.24 (NR)	Non-clinical community and student	App	4 weeks
Krafft et al. (2020)	USA	Social Anxiety	RCT	CBT	102 (76.4%)	ACT = 29%; CBT = 40%	20.51 (NR)	Student	Self-help book	8-week reading schedule
Lappalainen et al. (2021)	Finland	Student mental health and wellbeing	RCT	iACT Waitlist	243 (51%)	iACT face = 5% iACT = 0% WL = 0%	15.27 (15-16)	Student	Guided iACT	5-week program
Lee et al. (2020)	USA	Trichotill-omania	RCT	Waitlist	39 (87.2%)	ACT = 32%; WL = 41%	21 (12-45)	Non-clinical community	Individual, Face to Face	10 sessions, weekly

Study author and year	Country	Area of Interest	Design	Control/ comparison	Sample N (% female)	% Drop out	Mean Age (range)	Population	Intervention format	Length
Levin et al. (2020)	USA	Student mental health and wellbeing	RCT	MBSR	109 (65.1%)	ACT = 30%; MBSR = 37%	20.94 (18-43)	Student	Self-help book	8-week reading schedule
Levin et al., (2019)	USA	Self-help	RCT	Random skills and EMA app	69 (68.1%)	Tailored ACT = 22% Random ACT = 14% EMA = 8%	21.9 (18-46)	Student and non-clinical community	App	4 weeks with twice daily check ins
Levin, et al. (2017)	USA	Help-seeking students	RCT	Waitlist	79 (66%)	ACT = 20%; WL = 23%	20.51 (NR)	Student	Self-help iACT	6 sessions over 4 weeks
Levin et al. (2016)	USA	University students	RCT	MHE	180 (79.6%)	ACT = 30%; MHE = 14%	21.61 (18-58)	Student	Self-help iACT	3-week program with 2 core sessions
Muto et al. (2011)	USA	International student mental health	RCT	Waitlist	70 (62.86%)	ACT = 14%; WL = 11%	23.6 (20-26)	International students	Self-help book	8 weeks
Räsänen et al. (2016)	Finland	Student mental health	RCT	Waitlist	68 (85%)	ACT = 12%; WL = 0%	24.29 (19-32)	Student	Guided iACT	7 weeks

Study author and year	Country	Area of Interest	Design	Control/ comparison	Sample N (% female)	% drop out	Mean Age (range)	Population	Intervention format	Length
Haeger et al. (2020)	USA	Student mental health	Pre-post	-	11 (82%)	No drop out	23.55 (20-38)	Student	App	Two weeks use of app
Levin et al. (2015)	USA	Student mental health	Pre-post	-	82 (75.6%)	56%	21.88 (NR)	Student	Guided iACT	3 x 45-minute lessons with 4-week access
Gómez et al. (2014)	Spain	Conduct disorder and impulsivity	Case series	-	5 (40%)	No drop out	15.8 (15-17)	Clinical community	Individual, Face to Face	4 x 90-minute twice weekly sessions
Twohig et al. (2006)	USA	Chronic skin picking	MB	-	5 (100%)	No drop out	23 (19-28)	Non-clinical community and student	Individual, face to face	8 x 60-minute sessions
Chapman & Evans (2020)	UK	Anxiety and Autism	Case Study	-	1 (100%)	N/A	15	Clinical community	Individual, Face to Face	8 x 60-minute sessions
Juncos & Markham (2016)	USA	MPA	Case Study	-	1 (100%)	N/A	19	Student	Individual, Face to Face	10 x 60-minute sessions
Masuda et al. (2016)	USA	Purging Disorder	Case Study	-	1 (100%)	N/A	21	Clinical community	Individual, face to face	10 sessions, weekly

Note.

NR = Not Reported; N/A Not Applicable

Drop out = percentages rounded to nearest whole number

Country: UK = United Kingdom; USA = United States of America

Design: RCT = Randomised Controlled Trial; MB = Multiple Baseline

Area of interest: MPA = Music Performance Anxiety

Control: CBT = Cognitive Behavioural Therapy; MBSR = Mindfulness-Based Stress Reduction; EMA app = Ecological Momentary Assessments only Application; MHE = Mental Health Education

HS = Help Seeking; SONA = University students receiving course credit

Intervention format: iACT = Web-based Acceptance and Commitment Therapy

Quality Assessment

Due to variability in study designs, and in line with other ACT reviews (e.g., Swain et al., 2015; Kelson et al., 2019; Graham et al., 2016), Öst's (2008) *Psychotherapy Outcome Study Methodology Rating Form (*POMRF) was used to quality appraise included studies (appendix B). The POMRF contains 22-items, covering a range of key methodological issues, such as: participant details, research design, psychometric properties of outcome measures, manualised approaches, treatment adherence and clinical significance. Each item can be rated on a 3-point scale, ranging from 0 (poor) to 2 (good). Given the variability in the target populations of the present review, two items (items 2 and 4) relating to certainty and chronicity of psychiatric disorders were removed, in line with other ACT systematic reviews (e.g., Graham et al., 2016). Remaining items are summed together, providing a total score ranging between 0 and 40 points. The POMRF can be used to quality appraise studies with multiple research designs, indicating its suitability for the purposes of this review, and has demonstrated high interrater reliability (kappa coefficient mean = 0.75) and internal consistency (Cronbach alpha = 0.86).

A second reviewer (KO) independently extracted data and quality rated three (16.67%) included studies. Cohen's Kappa coefficient was calculated at 0.89, indicating strong inter-rater reliability (McHugh, 2012). Any disagreements were resolved through discussion and a collective decision made based upon the quality assessment criteria (Öst, 2008).

Method of Synthesis

The present review utilised a narrative synthesis approach, due to the inclusion of a wide variety of research designs, such as RCTs, case studies and case series. Although formal analysis of heterogeneity was not conducted, this was deemed likely to be high between studies (e.g., study designs, populations and outcomes), therefore a meta-analysis was considered inappropriate.

Results

Study and sample characteristics

A total of 18 studies met inclusion criteria for the present review. Studies were published between 2006 and 2021, although the majority were conducted from 2016 onwards (n = 14, 77.78%). Research designs included eleven (61.11%) RCTs, two (11.11%) pre-post studies, three (16.75%) case studies, one (5.56%) case series and one (5.56%) multiple baseline design. Out of the eleven RCTs, three studies compared ACT to an active control, such as CBT (1), MBSR (1) and MHE (1), one compared to ecological momentary assessments only, the remaining RCTs used the waitlist as a control group.

Across all studies, there were a total of 1110 participants, of which the majority (924; 83.24%) were female. Mean ages ranged from 15.27 years to 24.57 years. The total age range was between 15 and 58 years. Most participants were recruited from university or college student populations (*n* = 13; 72.22%).

Student mental health was the most commonly researched area (*n* = 8; 44.44%). Other studies investigated ACT as a treatment for anxiety and depression (*n* = 2; 11.11%), social anxiety (*n* = 2; 11.11%), conduct disorder (1), anxiety in an

individual with autism (1), music performance anxiety (1), trichotillomania (1), chronic skin picking (1) and purging disorder (1).

The mode of intervention delivery varied, with studies providing face-to-face delivery (*n* = 6, 33.33%), self-help books (*n* = 4, 22.22%), mobile applications (*n* = 3, 16.67%) or guided (*n* = 3, 16.67%) and non-guided web-based interventions (*n* = 2, 11.11%).

17 studies included at least one measure of psychological symptoms. The most commonly used was the Depression, Anxiety, Stress Scale (DASS; Lovibond & Lovibond, 1995), administered in eight studies. For wellbeing, the Mental Health Continuum-Short Form (MHC-SF; Keyes et al., 2005) was employed in six studies. Sixteen studies incorporated at least one measure of psychological flexibility. The most popular measure of psychological flexibility was the Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011), utilised in nine studies.

Assessment and overview of methodological quality

Studies varied considerably in quality, ranging from 8 to 21 out of a maximum score of 40. The average score was 15.28 (SD = 3.54). Although overall cut-offs are not specified in the POMRF, the mean quality rating is lower in the present review than Öst's (2008) review on CBT trials. To enable comparisons in quality between included studies, cut-offs were calculated in accordance with other systematic reviews utilising the POMRF (e.g., Swain et al., 2013; Swain et al., 2015; Sloan et al., 2017). Studies rated one or more standard deviations (SD; rounded to the nearest whole number) below the mean were categorised as 'well below average' (current review range 0-11; n = 2). Those within one SD below the mean were categorised as 'below average' (range 12-15; n = 7). Studies rated within one SD

above the mean were categorised as ‘above average’ (range 16-18; n = 5) and those rated more than one SD above the mean were categorised as ‘well above average’ (19+; n = 4).

Sample representativeness received lower scores on the POMRF, particularly those recruiting for convenience from universities who were not actively help seeking or with no specified interest in student mental health or wellbeing. A weakness of many studies was the lack of control of concomitant treatments, such as other therapies or medications. Only two studies received points on the POMRF for this (Lee et al., 2020; Räsänen et al., 2016). Studies appropriately analysed data although very few reported a priori power analyses. A clear strength of all included studies that experienced drop out was the use of intention to treat approaches. However, not all studies reported on participant drop out reasons.

Overview of results/outcomes

An overview of study outcome measures, POMRF ratings, effect sizes and reliable change indices, where available, are presented in Table 2.2. If effect sizes were not presented in the paper, these were calculated by the primary researcher providing sample sizes, means and standard deviations were made available by the authors (Durlak, 2009). Between group Cohen’s d effect sizes were calculated from post means and standard deviations (SD) using the following equation:

$$d_s = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{(n_1-1)SD_1^2+(n_2-1)SD_2^2}{n_1+n_2-2}}}$$

Within group effect sizes were calculated for the ACT condition using pre and post means and SD's if available, using the following formulae:

$$\text{Cohen's } d_z = \frac{M_{\text{diff}}}{\sqrt{\frac{\sum (X_{\text{diff}} - M_{\text{diff}})^2}{N-1}}}$$

Table 2.2
POMRF quality ratings, effect sizes and reliable change indices, where available, for included studies

		POMRF		Outcome measures					
Study	**Design**	**Score**	**Rating**	**Psychological symptoms (α) or distress**	**Wellbeing or QoL (α)**	**Psychological flexibility (α)**	**WG pre to post effect size (*d*)**	**BG effect size (*d*)**	**RCI (% improved)**
Krafft et al. (2020)	RCT	21	Well above average	LSAS (0.95) GHQ-12 (0.9)			1.5 *** 1.38 ***	-0.18 NS (ACT vs CBT) 0.12* (ACT vs CBT)	58.2% -
Lee et al. (2020)	RCT	21	Well above average	MGH-HS (0.85)		 AAQ-II (0.91)	1.38 *** 0.89 *	1.78 *** 0.6 NS	- -
Levin et al. (2020)	RCT	19	Well above average	DASS-Total (0.94) CCAPS-A (0.79)	 MHC-SF (0.94)	 AAQ-US (0.93)	0.96 *** 0.72 *** 0.62 *** 0.69 ***	0.06 NS (ACT vs MBSR) 0.17 NS (ACT vs MBSR) 0.13 NS (ACT vs MBSR) 0.15 NS (ACT vs MBSR)	- - - -
Muto et al. (2011)	RCT	19	Well above average	GHQ-12 (0.82) DASS–D (0.83) DASS-A (0.74) DASS-S (0.79)		 AAQ (0.7)	0.98*** †† (NR) NS †† (NR)* †† (NR) 0.87*	(NR) NS †† (NR) NS †† (NR) NS ††0.86* (NR) NS	- - - - -

		POMRF		Outcome measures					
Study	**Design**	**Score**	**Rating**	**Psychological symptoms (α) or distress**	**Wellbeing or QoL (α)**	**Psychological flexibility (α)**	**WG pre to post effect size (*d*)**	**BG effect size (*d*)**	**RCI (% improved)**
Räsänen et al. (2016)	RCT	18	Above average	PSS-10 (0.72)			0.61 ***	0.54 (d_{corr})*	-
				BDI-II (0.84)			1.12 ***	0.69 (d_{corr})**	-
				DASS–D (0.93)			1.1 ***	0.55 (d_{corr})**	-
				DASS–A (0.86)			0.42 *	0.2 (d_{corr}) NS	-
				DASS–S (0.9)			0.56 **	0.18 (d_{corr}) NS	-
					MHC-SF (0.88)		0.61 ***	0.46 (d_{corr})**	-
						AAQ-II (0.87)	0.51 *	0.11 (d_{corr}) NS	-
Lappalainen et al. (2021)	RCT	16	Above average	† iACT face DEPS (0.95)			0.15*	0.2*	-
					SWLS (>0.88)		0.19*	0.15 NS	-
						AFQ-Y (>0.87)	0.03 NS	0.09 NS	-
				† iACT DEPS (0.95)			0.16*	0.2*	-
					SWLS (>0.88)		0.3*	0.25*	-
						AFQ-Y (>0.87)	0.15 NS	0.2 NS	-
Levin et al. (2019)	RCT	16	Above average	DASS-Total (0.92)			0.55*	1.21* (ACT vs EMA)	-
					MHC-SF (0.94)		0.73**	-0.01 NS (ACT vs EMA)	-
						AAQ-II (0.94)	0.62*	0.47 NS (ACT vs EMA)	-
						CompACT (0.85)	0.63**	0.21 NS (ACT vs EMA)	-

		POMRF		Outcome measures					
Study	**Design**	**Score**	**Rating**	**Psychological symptoms (α) or distress**	**Wellbeing or QoL (α)**	**Psychological flexibility (α)**	**WG pre to post effect size (*d*)**	**BG effect size (*d*)**	**RCI (% improved)**
Levin et al. (2016)	RCT	16	Above average	DASS–D (0.89)			-0.04 NS	-0.14 NS (ACT vs MHE)	-
				DASS-A (0.84)			0.03 NS	-0.01 NS (ACT vs MHE)	-
				DASS-S (0.87)			0.01 NS	-0.2 NS (ACT vs MHE)	-
					MHC-SF (0.93)		0.19 NS	-0.08 NS (ACT vs MHE)	-
						AFQ-Y (0.9)	0.18 NS	0.06 NS (ACT vs MHE)	-
Kocovski et al. (2019)	RCT	15	Below average	SPIN (>0.93)			0.65***	0.74***	-
				LSAS (>0.95)			0.65***	0.79***	-
				BDI-II (>0.93)			0.47***	0.61***	-
					SWLS (>0.88)		0.32***	0.28*	-
						SA-AAQ-SF (>0.92)	0.68***	0.95***	-
Levin et al. (2017)	RCT	12	Below average	CCAPS-34 (0.92)			0.52 **	0.66*	-
					MHC-SF (0.93)		0.60 ***	0.58*	-
						AAQ-II (0.93)	(NR) NS	(NR) NS	-

		POMRF		Outcome measures					
Study	**Design**	**Score**	**Rating**	**Psychological symptoms (α)**	**Wellbeing or QoL (α)**	**Psychological flexibility (α)**	**WG pre to post effect size (*d*)**	**BG effect size (*d*)**	**RCI (% improved)**
Krafft et al. (2019)	RCT	12	Below average	Help-seeking:					
				DASS-Total (NR)			1.26 **	0.39 NS	-
				DASS–D (0.93)			1.08 **	-0.29 NS	-
				DASS-A (0.86)			0.67 NS	-0.01 NS	-
				DASS-S (0.86)			0.86 *	0.65 NS	-
					MHC-SF (0.93)		NR NS	(NR) NS	-
				Student:					
				DASS-Total (NR)			0.17 NS	-0.07 NS	-
				DASS–D (0.93)			0.19 NS	0.14 NS	-
				DASS-A (0.86)			0.2 NS	-0.18 NS	-
				DASS-S (0.86)			0.07 NS	-0.08 NS	-
					MHC-SF (0.93)		0.5 NS	0.55 NS	-
Levin et al. (2015)	Pre-Post	14	Below average	DASS–D (0.91)			0.6 ***	-	-
				DASS-A (0.8)			0.55 **	-	-
				DASS-S (0.82)			0.4 **	-	-
					SWLS (0.89)		0.18 NS	-	-
						AAQ-II (0.82)	0.66 ***	-	-

		POMRF		Outcome measures					
Study	**Design**	**Score**	**Rating**	**Psychological symptoms (α)**	**Wellbeing or QoL (α)**	**Psychological flexibility (α)**	**WG pre to post effect size (*d*)**	**BG effect size (*d*)**	**RCI (% improved)**
Haeger et al. (2020)	Pre-post	12	Below average	DASS–D (0.78) DASS-A (0.78) DASS-S (0.8)		 AAQ-II (0.79)	1.08 (*g*)** 0.73 (*g*)** 0.81 (*g*)** 0.64 (*g*)**	- - - -	55% 27% 55% 36%
Gómez et al. (2014)	Case series	11	Well below average	EMIC (NR SCS (NR)		 AAQ-II (NR)	- - -	- - -	- - -
Twohig et al. (2006)	MB	17	Above average	SPIS (0.88-0.93) MGH-HS (0.89) BAI (<0.9) BDI-II (NR)		 AAQ (NR)	- - - - -	- - - - -	- - - - -
Juncos and Markham (2016)	Case Study	14	Below average	KMPAI (0.94) PAI (0.89) SIAS (0.93) OQ-45.2 (0.93)		 AAQ-II (0.84)	- - - - - -	- - - - - -	- - - - - -

		POMRF		Outcome measures					
Study	**Design**	**Score**	**Rating**	**Psychological symptoms (α)**	**Wellbeing or QoL (α)**	**Psychological flexibility (α)**	**WG pre to post effect size (*d*)**	**BG effect size (*d*)**	**RCI (% improved)**
Masuda et al. (2016)	Case Study	14	Below average	EDE-Q (0.78)			-	-	-
				MAC-R (0.9)			-	-	-
				CIA 3.0 (0.97)			-	-	-
				GHQ-12 (0.88)			-	-	-
					WHOQOL (NR)		-	-	-
						AAQ-II (0.93)	-	-	-
						BI-AAQ (0.96)	-	-	-
Chapman & Evans. (2020)	Case Study	8	Well below average		WEMWBS (NR)		-	-	-
						AVQ-Y (NR)	-	-	-
						DNA-V (NR)	-	-	-

Note.

Titles: POMRF = Psychotherapy Outcome Study Methodology Rating Form; QoL = Quality of Life; WG = Within Group; BG = Between Group; RCI = Reliable Change Index

Results: * = $p < .05$; ** = $p < .01$; *** = $p < .001$; NR = Not reported; NS = Not significant; g = Hedge's g; d_{corr} = Cohen's d corrected; † = Subsample completing at least three modules as per ACT protocol; † † = moderate and severe subsample.

BG: effect sizes reported are ACT compared to waitlist, unless otherwise specified.

Outcome measures: EMIC = Magallanes Computerised Impulsivity Scale; SCS = Self-Control Schedule; AAQ-II = Acceptance and Action Questionnaire-Version 2; AAQ = Acceptance and Action Questionnaire; DASS-D = Depression Anxiety Stress Scales – Depression scale; DASS-A = Depression Anxiety Stress Scales – Anxiety scale; DASS-S = Depression Anxiety Stress Scales – Stress scale; DASS-Total = Depression Anxiety Stress Scales – Total score; KMPAI = Kenny Music Performance Anxiety Inventory; PAI = Performance Anxiety Inventory; SIAS = Social Interaction Anxiety Scale; OQ-45.2 = Outcome Questionnaire-45.2; SPIN = Social Phobia Inventory; LSAS = Liebowitz Social Anxiety Scale; BDI-II = Beck Depression Inventory-II; SWLS = Satisfaction With Life Scale; SA-AAQ-SF = Social Anxiety - Acceptance and Action Questionnaire - Short Form; MHC-SF = Mental Health Continuum - Short Form; GHQ-12 = General Health Questionnaire – 12 item; MGH-HS = Massachusetts General Hospital – Hairpulling Scale; CCAPS-A = Counseling Center Assessment of Psychological Symptoms – Academic Distress Subscale; CCAPS-34 = Counseling Center Assessment of Psychological Symptoms – 34 item; AAQ-US = Acceptance and Action Questionnaire – University Students; CompACT = Comprehensive Assessment of Acceptance and Commitment Therapy; AFQ-Y = Avoidance and Fusion Questionnaire for Youth; EDE-Q = Eating Disorder Examination-Questionnaire; MAC-R = Mizes Anorexic Cognition-Revised; CIA 3.0; Clinical Impairment Assessment 3.0; WHOQOL = World Health Organisation Quality of Life Scale - shortened version; BI-AAQ = Body Image Acceptance and Action Questionnaire; PSS-10 = Perceived Stress Scale-10 item; SPIS = Skin Picking Impact Scale; BAI = Beck Anxiety Inventory; WEMWBS = Warwick Edinburgh Mental Wellbeing Scale; DNA-V = Discover, Noticer, Advisor and Values tracker; DEPS = Depression Scale.

Effect direction plot and sign test

An effect direction plot (Thomson & Thomas, 2013) was produced as an additional tool to represent data (see Table 2.3 in the supplementary information and Table 2.4). The most recent guidance was sought from Boon and Thomson (2021) following updated Cochrane guidance for systematic reviews (Higgins et al., 2019). As recommended by Higgins et al. (2019), a sign test was conducted using an online calculator (https://www.graphpad.com/quickcalcs/binomial1/; Boon & Thomson, 2021). Given the varied sample sizes and inclusion of small-n studies, the effect direction plot seemed the most appropriate method to tabulate and present data. The sign test utilises a vote counting approach, which requires direction of effect to be standardised into binary metric of benefit or harm (Higgins et al., 2019). The sign test then compares the number of studies showing benefit to those demonstrating harm.

Table 2.4

Effect direction plot, with sign test, summarising direction of effect for outcomes of interest organised according to research design and quality rating

Study	Study design	POMRF rating	Psychological Symptoms and distress	QoL and wellbeing	Psychological Flexibility
Krafft et al. (2020)	RCT	21	▲2		
Lee et al. (2020)	RCT	21	▲		▲
Levin et al. (2020)	RCT	19	▲3	▲	▲
Muto et al. (2011)	RCT	19	▲4		▲
Räsänen et al. (2016)	RCT	18	▲5	▲	▲
Lappalainen et al. (2021)	RCT	16	▲	▲	▲
Levin et al. (2019)	RCT	16	▲	▲	▲2
Levin et al. (2016)	RCT	16	◀▶3	▲	▲
Kocovski et al. (2019)	RCT	15	▲3	▲	▲
Levin et al. (2017)	RCT	12	▲	▲	▲
Krafft et al. (2019)	RCT	12	▲3	▲	
Levin et al. (2015)	Pre-post	14	▲3	▲	▲

Study	Study design	POMRF rating	Psychological symptoms	QoL and wellbeing	Psychological Flexibility
Haeger et al. (2020)	Pre-post	12	▲ 3		▲
Gómez et al. (2014)	Case series	11	▲2		▲
Twohig et al. (2006)	Multiple baseline	17	▲4		▲
Juncos and Markham (2016)	Case study	14	▲4		▲
Masuda et al. (2016)	Case study	14	▲ 4	▲	◄► 2
Chapman and Evans. (2020)	Case study	8		▲	◄► 5
Sign test for positive effect direction (two tailed):			P < 0.0001	P = 0.001	P = 0.0001

*Note***.**

Sample Size: ▲ large arrow >100; ▲ medium arrow 10- 99;▲ small arrow <10.

Effect Direction: upward arrow = positive impact; downward arrow = negative impact; sideways arrows = no change/conflicting findings. Effect direction based upon within group from pre to post intervention.

Subscript Numbers: number of outcomes included within category synthesis is 1 unless indicated otherwise in subscript next to effect direction

Study Quality: Colour of row denotes the quality of the study; Dark green = well above average; light green = above average; amber = below average; orange = well below average.

A narrative synthesis was conducted, with the results presented according to the outcomes of interest and grouped into themes around clinical severity.

Are ACT interventions effective in improving psychological symptoms and distress in youth?

Seventeen studies incorporated at least one measure of psychological symptoms or distress. Overall, evidence indicated that all but one (Levin et al., 2016) study demonstrated improvements in over 70% of psychological symptom and distress outcomes. The sign test was significant ($p < 0.001$), suggesting overall within group positive impact. Upon close inspection, the less consistent findings, where ACT either did not lead to improvements within or between group, or improvement was non-significant, typically occurred in studies involving non-clinical student or community populations (Levin et al., 2016; Krafft et al., 2019; Muto et al., 2011).

Non-clinical and general mental health

Ten studies researched the efficacy of ACT on psychological symptoms or distress within non-clinical or general mental health populations. None provided face-to-face interventions; all were delivered remotely or self-help based, such as through an ACT app ($n = 3$), web-based ACT (iACT, $n = 5$) or self-help book ($n = 2$). However, three were guided iACT interventions, by counsellors (Levin et al., 2015) or ACT trained student coaches (Lappalainen et al. 2021; Räsänen et al., 2016). Within group pre-post intervention effect sizes across all modes of delivery typically exceeded Cohen's *d* of 0.4. These were not observed in two iACT studies, one not guided ($d = -0.04$ to 0.03, Levin et al., 2016) and one guided ($d = 0.15$ –

0.16, Lappalainen et al., 2021). Between group effect sizes ranged considerably (d = -0.2 to 1.21).

Two studies researching ACT interventions within student populations compared ACT to an active control (Levin et al., 2016; Levin et al., 2020). Both were quality rated relatively highly compared to other included studies and both had large sample sizes. Neither study found any significant differences between ACT and the active control. Levin et al. (2020) compared an ACT book, *The Happiness Trap* (Harris, 2007), with a Mindfulness Based Stress Reduction (MBSR) book, *A Mindfulness-Based Stress Reduction Workbook* (Stahl & Goldstein, 2010). Following bibliotherapy, significant within-group improvements were observed in both ACT and MBSR conditions. Effect sizes were moderate to large in the ACT condition pre to post intervention. However, analysis indicated no significant time by condition interactions in psychological symptoms. A web-based ACT intervention (ACT on College Life [ACT-CL]) was also compared against a Mental Health Education (MHE) program (Levin et al., 2016). No significant differences were found between conditions at post assessment on any psychological symptoms (measured by the DASS; Lovibond & Lovibond, 1996). ACT-CL demonstrated negligible improvements apart from a deterioration in depression symptoms. Additional analyses on students reporting severe depression and/or anxiety demonstrated no significant changes, although trends suggested superiority of MHE in reducing symptomatology for greater severity of difficulties.

Three studies investigated ACT mobile applications (apps) for youth seeking support for psychological symptoms, such as anxiety and depression, and distress. Two studies investigated the effectiveness of Act Daily, an app providing tailored

exercises based on 'in the moment' ecological momentary assessments (EMA; Haeger et al., 2020; Levin et al, 2019). Both studies demonstrated significant within group improvements on psychological symptoms. Levin et al. (2019) demonstrated superiority of a tailored ACT app compared to an EMA only control. By post treatment, significantly lower distress was found in the tailored app condition compared to both the random and EMA conditions. The representativeness of the sample, the majority of which were university students receiving credit for participation, may have impacted on the study's findings and generalisability, however.

Similarly, Haeger et al. (2020) investigated ACT Daily for students awaiting college counseling support. Results indicated statistically significant changes on depression, anxiety and stress (measured by the DASS; Lovibond & Lovibond, 1995), with medium to large effect sizes. RCI calculations, a strength of the study, indicated reliable improvement in 27% to 55% of the sample from pre-post intervention. Several limitations contributed to the low-quality rating, including the sample size of 11, which was likely underpowered to detect changes, the lack of control group and lack of blind assessors.

In Krafft et al.'s (2019) pilot RCT utilising a complex and simple ACT matrix app, and a waitlist control, primary outcomes included depression, anxiety and stress symptoms (measured by the DASS; Lovibond & Lovibond, 1995). Only the complex matrix condition met criteria for constituting an ACT intervention, due to identification of values and inclusion of mindfulness and acceptance, which were not all present in the simplified version. Participants included help-seeking community and student subsamples. A significant time by condition interaction was found for overall distress and anxiety, with non-significant trends for depression and

stress. There were numerous methodological limitations, such as no controls for other treatments or prior power analyses, thus reducing its weighting within the present review.

Four studies investigated iACT interventions, with three studies designed as RCTs comparing iACT to a waitlist (Lappalainen et al., 2021; Levin et al., 2017; Räsänen et al., 2016) and one pre post design (Levin et al., 2015). All four demonstrated significant improvements on psychological symptoms or distress within the ACT group pre to post, although effect sizes varied considerably with Cohen's *d* between 0.15 and 1.12. Significant between-group differences comparing ACT to a waitlist control group were observed for depression and distress, with small to moderate effect sizes across all three RCTs. Räsänen et al. (2016) observed significant within group differences for stress and anxiety (measured by the DASS; Lovibond & Lovibond, 1995) in the ACT group however this was not significantly different to the waitlist. On the contrary, their primary outcome of stress, measured by the PSS-10 (Cohen et al., 1983), demonstrated iACT significantly outperformed the waitlist. Quality rating was high in comparison to other studies, with additional points granted for excluding participants receiving other psychological or pharmacological treatments.

Lappalainen et al., (2021) focused on symptoms of depression in their large-scale RCT with adolescents. Aimed as a preventative intervention, only 31% of participants reported elevated depression symptoms at baseline. Results indicated no significant differences in depression symptoms. Participants who had completed at least half of the iACT program, however, demonstrated significant reductions in depression symptoms.

Levin et al.'s (2017) RCT recruited help-seeking students to investigate the impact of an iACT self-help program. Significant improvements on total overall distress were demonstrated both pre to post intervention and compared to the waitlist control, with moderate effect sizes. There were several limitations resulting in a comparatively below average quality rating. Strengths included the use of valid and reliable measures with limitations involving the design of the study, with a lack of active control group.

In their pre-post trial, Levin et al. (2015) explored the feasibility of counselor guided iACT for students. Significant within-group improvements, with moderate effect sizes, were found for depression and anxiety and small to moderate effect for stress (measured by the DASS; Lovibond & Lovibond, 1996). The study was comparatively below average quality.

Muto et al. (2011) explored ACT bibliotherapy with Japanese international students. Quality rated 'well above average' and thus holding more weighting, their RCT compared the impact of a Japanese translated ACT book, *Get out of your mind and into your life* (Hayes & Smith, 2005; Hayes & Smith, 2008) with a waitlist control. Psychological distress (measured by the General Health Questionnaire [GHQ-12], Goldberg et al., 1997) significantly improved within the ACT group but not the waitlist condition. Reliable change indices (RCI; Jacobson et al., 1984; Jacobson & Truax, 1991) indicated that 15% of the waitlist group improved reliably compared to 64% in the ACT condition.

Specific clinical presentations

Seven studies investigated the effectiveness of ACT on psychological symptoms or distress with specific mental health difficulties.

Two studies conducted RCTs investigating the effectiveness of ACT self-help bibliotherapy, using the *Mindfulness and Acceptance Workbook for Social Anxiety and Shyness* (Fleming & Kocovski, 2013) for social anxiety (Krafft et al., 2020; Kocovski et al., 2019). The highest quality rated study was Krafft et al.'s (2020) RCT. Participants were randomized to receive either a CBT workbook, *Shyness and Social Anxiety Workbook, Second Edition* (Antony & Swinson, 2017), or the ACT workbook (Fleming & Kocovski, 2013). Mixed effect model analysis indicated no significant time by condition interactions on social anxiety (LSAS -SR; Fresco et al., 2001). However, in both conditions, time was a significant predictor of improvement. RCI, based on the cut off point for change on the LSAS-SR (Fresco et al., 2001), demonstrated 58.82% of participants in the ACT condition and 65.52% in the CBT condition reliably changed by post treatment. However, this was not significantly different between groups.

Kocovski et al., (2019) similarly explored the effectiveness of the *Mindfulness and Acceptance Workbook for Social Anxiety and Shyness* (Fleming & Kocovski, 2013) for social anxiety compared to a waitlist control. Participants were recruited from the community although the exact recruitment strategy was unclear. Specific measures on social anxiety were employed, such as the SPIN (Connor et al., 2000), the LSAS (Liebowitz, 1987) and the Post-Event Processing Inventory Trait form (PEPI-T; Blackie & Kocovski, 2017). In addition, symptoms of depression were measured using the Beck Depression Inventory (BDI-II; Beck et al., 1996). Similarly to Krafft et al. (2020), significant change over time was observed in the ACT condition, with large effect sizes. No significant improvements on any outcome variables were observed in the waitlist group. Of note, participants experiencing higher levels of anxiety at baseline experienced greater reductions in social anxiety

symptoms. Limitations included high dropouts and lack of clarity whether an ITT approach was utilised. No formal diagnoses or screening for social anxiety were employed therefore it is unclear whether findings would be replicated in clinical populations. Although most participants were randomised appropriately, an additional 35 participants were recruited into the book condition following randomisation, which potentially introduces bias.

Five studies delivered entirely face-to-face interventions, four of which were small-N designs. Two face-to-face intervention studies (Lee et al., 2020; Twohig et al., 2006) investigated ACT as a treatment for chronic hairpulling, known as trichotillomania, and skin picking. Lee et al. (2020) conducted a high quality RCT investigating effectiveness of ACT with participants diagnosed with trichotillomania compared to the waitlist. The ACT group significantly improved on hairpulling symptoms (measured by the Massachusetts General Hospital Hairpulling Scale [MGH-HS]; Keuthen et al., 1995) pre to post intervention, with a large effect size (d = 1.38), with the majority (60%) of treatment completers suggested to have clinically significant changes. No significant changes were observed in the waitlist group. Methodological quality would have been greater if ACT was compared to an established treatment.

Similar findings were observed in Twohig et al.'s (2006) multiple baseline study. However, the sample included only five participants. Psychological symptoms and distress related to skin picking or hair pulling were measured through the Skin Picking Impact Scale (SPIS; Keuthen et al., 2001) and the MGH-HS (Keuthen et al., 1995). Four participants demonstrated large reductions in skin picking following treatment however only one maintained these by 3-month follow up. Anxiety symptoms (measured by the Beck Anxiety Inventory [BAI], Beck et al., 1988),

decreased for all participants between pre and post intervention. However, this was not maintained fully at follow up. Three participants reported reductions in depression symptoms (BDI-II; Beck et al., 1996), which were maintained by one participant. One participant reported increased symptoms of depression at post assessment. Quality rating was 'above average' due to the use of an ACT manual (Hayes et al., 1999) and monitoring of treatment integrity using a validated and reliable scoring system. However, sample size was very small and study design was not randomised or blind.

One study, utilizing a case series design, explored the effectiveness of an ACT intervention for participants with conduct disorder (Gómez et al., 2014). Significant improvements were observed on impulsivity (measured by the Magallanes Computerized Impulsivity Scale [EMIC], Servera & Llabrés, 2000) and self-control symptoms (measured by the Self-Control Schedule [SCS]; Rosenbaum, 1980). Methodological quality was below average, with limitations involving a lack of comparison group and no analysis for reliable or clinically significant change, making it difficult to assess meaningfulness of changes. The design and small sample make it difficult to generalise findings to the wider population due to potential biases in participant selection.

Finally, two case studies explored the efficacy of individual face-to-face ACT on psychological symptoms in purging disorder (Masuda et al. 2016) and music performance anxiety (MPA; Juncos & Markham, 2016)

Psychological symptoms relating to eating difficulties were included in Masuda et al. (2016), measured using The Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn, 2008), the Mizes Anorexic Cognition-Revised

(MAC-R; Mizes et al., 2000) and the Clinical Impairment Assessment 3.0 (CIA 3.0; Bohn et al., 2008). Additionally, the GHQ-12 (Goldberg et al., 1997) was used to assess psychological distress. All outcomes improved post-intervention.

Juncos and Markham (2016) similarly used specific outcomes when exploring ACT for MPA. Both MPA (measured by the revised Kenny Music Performance Anxiety Inventory [KMPAI]; Kenny, 2009) and social anxiety (measured by the Social Interaction Anxiety Scale [SIAS]; Mattick & Clarke, 1998) reliably improved at post and follow up however were not found to be clinically significant. Scores on the Performance Anxiety Inventory (PAI; Nagel et al., 1989) and the Outcome Questionnaire (OQ-45.2; Lambert et al., 1996), both reliably changed and were clinically significant from pre to post and follow up.

Both studies were quality rated 'above average'. The lack of control group and small samples are clear limitations. Single subject designs make it difficult to generalize the findings to the wider population and therefore come to definitive conclusions regarding the effectiveness of ACT for MPA or purging disorder. First authors delivered the interventions, potentially resulting in experimenter expectancy effects and demand characteristics. Both benefitted from clear descriptions of the participants and treatments provided.

Are ACT interventions effective in improving wellbeing or QoL in youth?

Eleven studies included a measure of either wellbeing or QoL. Eight studies investigated the impact on wellbeing or QoL on general mental health and three explored this within clinical samples. Overall, all ACT interventions resulted in a positive direction of effect for wellbeing and QoL on within group pre to post comparisons, as indicated by the effect direction plot, with a significant sign test (p =

.001). Effect sizes, methodological quality and significance both within group and between ACT and other conditions, varied considerably. Effect sizes from pre to post intervention ranged from $d = 0.19$ to a moderate effect size of $d = 0.73$. When looking at between group comparisons, four out of eight RCTs demonstrated no significant difference in wellbeing or QoL measures between the ACT condition and waitlist or active controls. Effect sizes between groups ranged from $d = -0.08$ to a moderate effect size of $d = 0.58$.

Non-clinical and general mental health

Six studies, all RCTs, utilized the Mental Health Continuum Short Form (MHC-SF; Keyes, 2005) as a measure of wellbeing (Krafft et al., 2019; Levin et al., 2016; Levin et al., 2017; Levin et al., 2019; Levin et al., 2020; Räsänen et al., 2016). Four studies demonstrated significant pre to post intervention improvements in wellbeing following the ACT intervention, with medium effect sizes (Levin et al., 2017; Levin et al., 2019; Levin et al., 2020; Räsänen et al., 2016). Of these, two studies demonstrated significant between group differences when comparing ACT to the waitlist, with small to medium effect sizes (Levin et al., 2017; Räsänen et al., 2016). The other two did not show significant between group differences, when ACT was compared to MBSR (Levin et al., 2020) and with an EMA only condition (Levin et al., 2019). Two RCTs did not demonstrate any significant within group pre to post or between group improvements on the MHC-SF (Keyes, 2005; Krafft et al., 2019; Levin et al., 2016).

Two studies with student populations included an outcome on QoL. Levin et al. (2015) found a small effect size but no significant changes in QoL, measured by the Satisfaction with Life Scale (SWLS; Diener et al., 1985), in their counselor

guided iACT program group. Similarly, small effect sizes were found within group in Lappalainen et al., (2021) on the SLWS, however these were significant different pre to post. There were no significant differences in QoL comparing the iACT program with face-to-face contact and the waitlist, however there was a significant difference in the iACT program without face-to-face contact. Both demonstrated small effect sizes.

Specific mental health presentations

Three studies investigated the efficacy of ACT on wellbeing or QoL with specific mental health difficulties (Chapman & Evans, 2020; Kocovski et al., 2019; Masuda et al., 2016). Only one study was an RCT (Kocovski et al., 2019), investigating the effectiveness of ACT bibliotherapy. Significant differences on QoL (measured by the SWLS, Diener et al, 1985) between the ACT condition and the waitlist control was found, with only the ACT condition demonstrating significant within group improvements.

The remaining two studies investigating ACT for specific mental health conditions were case studies. Masuda et al (2016), in the case study for purging disorder, found that QoL (measured by the World Health Organisation Quality of Life short version [WHOQOL-BREF]; Skevington et al., 2004) demonstrated a positive direction of effect pre to post. Chapman and Evans (2020) also conducted a case study, administering the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al., 2007) during an ACT intervention for anxiety with a young person diagnosed with autism. Improvements were observed across all time points. No clinical or reliable change was conducted, limiting conclusions on meaningfulness of changes.

Do ACT interventions lead to improvements in key processes related to psychological flexibility in youth?

Sixteen studies included an overall measure of psychological flexibility. Fourteen studies demonstrated beneficial direction of effect in psychological flexibility outcomes within group pre to post intervention, with a significant sign test (p = .0001). However, two case studies demonstrated conflictual results (Chapman & Evans, 2020; Masuda et al., 2016). Within group effect sizes from pre to post intervention ranged from d = 0.03 to a large effect size of d = 0.89. However, in between group comparisons, eight out of nine RCTs demonstrated no significant difference in psychological flexibility between the ACT condition and waitlist or active controls.

Non-clinical and general mental health

Nine studies incorporated an overall measure of psychological flexibility within the areas of student or general mental health. Six studies demonstrated significant improvements pre to post intervention with moderate to large effect sizes (d = 0.51 to 0.87). Three studies demonstrating non-significant results pre to post intervention were: Lappalainen et al. (2021) and Levin et al. (2016) who utilised the Avoidance and Fusion Questionnaire for Youth (AFQ-Y; Greco et al., 2008), and Levin et al. (2017) using the AAQ-II (Bond et al., 2011). Seven RCTs employed a measure of overall psychological flexibility. In between group comparisons, none of these RCTs demonstrated any significant changes when the ACT group was compared to the control group, with effect sizes ranged from d = 0.06 to d = 0.47.

Specific mental health presentations

Two RCTs investigating ACT with specific mental health presentations measured changes in overall psychological flexibility (Kocovski et al., 2019; Lee et al., 2020). Both reported significant within group pre to post improvements, with moderate to large effect sizes (d = 0.68 to d = 0.89). However, Kocovski et al.'s (2019) study was the only one to demonstrate significant improvements between groups with large effect (d = 0.95). They employed a specific measure, the Social Anxiety Acceptance and Action Questionnaire Short Form (SA-AAQ-SF; Mackenzie & Kocovski, 2010).

Two case studies reported conflicting findings for psychological flexibility (Chapman & Evans, 2020; Masuda et al., 2016). In Masuda et al. (2016), psychological flexibility measured by the AAQ-II (Bond et al., 2011) deteriorated pre and post. However, improvements were reported at 3-month follow up, although this was not maintained at 12-month follow up. They also utilised a specific measure for body image psychological flexibility (The Body Image Acceptance and Action Questionnaire [BI-AAAQ]; Sandoz et al., 2013), which demonstrated improvements pre and post, that improved further at 3-month follow up and were maintained at 12-month follow up. Chapman and Evans (2020) employed the AVQ-Y (Greco et al, 2008), which improved during treatment with an individual with autism experiencing anxiety. However, results on the Discover, Noticer, Advisor and Values (DNA-V; Gillard et al., 2019) were conflictual.

Discussion

The present manuscript utilised a narrative synthesis methodology to explore the effectiveness of ACT interventions on psychological symptoms, distress, wellbeing and QoL in youth. In addition, the impact on psychological flexibility, a core process targeted in ACT, was explored. Overall, results indicate that ACT is beneficial across a range of psychological symptoms, distress and wellbeing when investigating within group pre-post intervention outcomes. Findings are less consistent when comparing outcomes with a waitlist or active control group. Results for psychological flexibility, indicated that only one study demonstrated significant improvement between groups by post intervention. However, methodological quality of included studies limits firm conclusions.

Effect direction

The use of an effect direction plot allowed all studies, irrespective of design and presence of effect sizes, to be synthesised and presented together. When looking at pre-post within-group effects, findings from the 18 included studies indicated beneficial results in the direction of effect for ACT interventions on psychological symptoms, wellbeing, QoL and psychological flexibility. Sign tests, recommended for use in systematic reviews without meta-analysis (McKenzie & Brennan, 2020), provided significant results for each group of outcomes. Although results appear promising, these should be interpreted with caution due to within group comparisons, relatively poor-quality ratings, and diverse study designs and outcomes.

When combining psychological symptoms and distress, using Boon and Thomson's (2021) guidance, 16 out of 17 studies demonstrated a positive direction

of effect pre-post intervention, with one, large scale RCT (Levin et al., 2016) demonstrating conflictual results. This suggests that ACT may be effective in reducing psychological symptoms although the magnitude or meaningfulness of the observed positive changes are not conveyed through effect direction. Upon inspection of reported positive effect sizes from pre to post intervention, these varied considerably from Cohen's *d* of 0.15 to 1.5. Only Levin et al. (2016) reported a negative effect size of Cohen's *d* = -0.04. Levin et al. (2016) suggested results may not have been favourable due to ACT-CL being in the prototype phase. Mindfulness exercises were secondary components, hence inclusion in the present review, however uptake and treatment adherence was low suggesting a lack of balance amongst the three response styles of the hexaflex (Figure 2.1, Hayes et al., 2012). Many of the largest effect sizes were reported in higher quality rated studies. The largest effect size was observed in Krafft et al., (2020), the highest quality rated study in the review, which investigated ACT and CBT bibliotherapy for social anxiety. Smaller effect sizes were more likely to be reported by population level approaches where participants were not actively help-seeking (e.g., Lappalainen et al., 2021). Nonetheless, the findings are encouraging and certainly do not indicate harm.

A similar picture emerged within the category of wellbeing and QoL. Eleven studies administered a measure of wellbeing or QoL, with all demonstrating a positive direction of effect. Just under small to moderate within group pre to post effect sizes were observed (*d* = 0.19 to 0.73), with four out of eight RCT's demonstrating significant between group differences (total *d* range -0.08 to 0.58).

Psychological flexibility was found to improve within group in all but two case studies, where results were conflictual (Chapman & Evans, 2020; Masuda et al, 2016). These studies investigated the efficacy of ACT with different populations to other studies in the review (purging disorder and anxiety in an individual with autism). Due to their single subject designs, however, they hold less weighting within the review. Only one study (Kocovski et al., 2019) demonstrated significant between-group improvements in psychological flexibility compared to a control group at post intervention, providing limited evidence of ACT's effectiveness in improving psychological flexibility.

ACT vs waitlist and other treatments

The most compelling evidence for the efficacy of ACT for youth is from the improvements observed within group, between pre- and post-treatment. Higher quality rated studies typically demonstrated significant improvements, with medium to large effect sizes. However, outcomes were less conclusive for studies which used a control group. Between group designs enable a more specific test of the effect of the intervention as opposed to other factors, such as natural recovery over time. In total, eight RCT's utilised a control group, seven comparing ACT to a waitlist and one an EMA only control group. Five of these studies reported significant improvements in at least 70% of psychological symptoms when compared to a waitlist or EMA only control group, with Cohens *d* effect sizes ranging from 0.2 to 1.78. ACT would be expected to outperform the waitlist, as indicated by other reviews. Possible explanations for a lack of improvement in three of the waitlist RCTs may be due to these studies recruiting non-help seeking samples with lower baseline severity of difficulties.

Scrutiny of between group data where ACT was compared to an active control (N=3), alludes to ACT not being significantly superior or inferior to other interventions (including CBT, MBSR and MHE) on any of the assessed outcomes of psychological symptoms, QoL, wellbeing or psychological flexibility. Historical debates surround the literature regarding ACT's superiority in comparison to other established treatments (e.g., Levin & Hayes, 2009). Such findings corroborate those of Fang and Ding (2020), who conducted a meta-analysis investigating the effectiveness of ACT for children. When ACT was compared to CBT, no significant differences were found (Fang & Ding, 2020). In the wider ACT intervention literature, a recent review of ACT meta-analyses demonstrated a similar pattern of results (Gloster et al., 2020). They found ACT to be effective across diagnoses and superior when compared to non-active controls, TAU and some active treatments. However, findings demonstrated that ACT was not significantly different to CBT (Gloster et al., 2020). Similar findings were presented by A-Tjak et al. (2015), with ACT demonstrating effectiveness for mental health and physical problems compared to non-active treatments although not significantly beyond those by established CBT. It can be construed as a positive finding that ACT does not perform significantly differently to another well-established treatment, even if it cannot be considered superior. Caution should be exercised though, due to only three studies comparing ACT to an active control in the present review. Future research would therefore benefit in implementing good quality RCTs, with a wide range of presentations and utilising active controls, to explore what works better for whom (Roth & Fonagy, 2004).

Quality rating of studies

Overall, most studies received less than half available points in the POMRF, with the highest rated studies receiving 21 points (Krafft et al., 2020; Lee et al., 2020) out of an available 40 points. Strengths typically included: the clarity of sample description, the representativeness of the sample, specific, valid and reliable outcome measures, process of randomisation, manualised or replicable treatment programs, handling of attrition and appropriate statistical analysis with presentation of means and standard deviations.

Limitations in methodological quality involved study design. These were generally rated low due to a lack of empirically supported active treatment or well-described TAU control. Across all studies, few points were awarded for conducting a priori power analysis to determine sample size. Most studies required participants to answer self-report questionnaires online or measures were administered by therapists. Therefore, no studies employed blind assessors that were trained to gather outcome measure data. Another limitation included the lack of long term follow up, with assessment points typically pre- and post-intervention, with some short term follow ups. Maximum points are awarded for follow ups of 12 months or longer, which were only awarded to three studies (Gómez et al., 2014; Masuda et al., 2016; Räsänen et al., 2016).

Surprisingly, only two studies (Lee et al., 2020; Räsänen et al., 2016) reported controlling for concomitant treatments. Controlling for extraneous variables permits improvements observed in participants to be attributed more directly to the intervention, which therefore strengthen the credibility and validity of findings (Kinser & Robins, 2013).

One item in the POMRF rated studies according to the representativeness of their sample. Most participants were recruited from universities, a highly appropriate target population when investigating student mental health. However other studies appeared to recruit from universities for convenience. Students provide an easy to access population although they may not represent the wider population. Some were offered research credits for taking part, which may further impact on the motivation to take part and thus introduce a participation bias.

Very few studies (31.25%) reported a calculation of reliable or clinically significant change in their findings. It has been suggested that reliable and clinically significant change should accompany group comparisons (Evans et al., 1998). Although important, effect sizes alone may not always suitably convey the clinical meaning of outcomes in research (Jensen and Corralejo, 2017). Given the suggested inclusion of wellbeing or QoL measures over clinical, psychological symptom based measures, reliable change calculations would be the most appropriate to utilise. Thus, it is recommended future studies calculate reliable change indices at the individual level using Jacobson and Truax's (1991) criteria.

Populations

Over half of the included studies looked at student or general mental health and wellbeing. This is likely driven by current aims to provide cost effective and flexible population level prevention and early interventions. However, many studies therefore included non-clinical participants who were not presenting with mental health difficulties and who may not therefore show much change on measures of psychological symptoms or distress. Heterogeneity in the presentations also limits conclusions on what specific mental health conditions ACT may be most beneficial

for. The majority of studies investigated ACT for general mental health, with few large scale RCTs on specific difficulties, such as social anxiety and trichotillomania. Although ACT is transdiagnostic in nature, future research should continue to explore the effectiveness of ACT with different populations on psychological symptoms, QoL and wellbeing. There are still large gaps in knowledge in understanding how effective and beneficial ACT is for different presentations with a youth population.

Measures

ACT does not attempt to directly reduce symptoms although reduction can be observed as a by-product (Harris, 2006). A finding from the present review was the emphasis on measuring psychological symptoms over wellbeing. Given the theoretical underpinnings of ACT, it is argued that the focus should not entirely be on diagnoses or symptoms and instead should explore wellbeing and functioning (Gloster et al., 2020). After all, good mental health is not purely the absence of difficulties (Keyes, 2005). Analysis would be well complimented through calculation of the RCI (Jacobson & Truax, 1991).

Mode of delivery

Only one RCT in the present review conducted a face-to-face intervention (Lee et al., 2020). Other face-to-face interventions included were small-n designs, which greatly limit conclusions and generalizability of findings. Ten studies focused on self-help programs, such as books, web-based support or apps, two of which were guided (Levin et al., 2015; Räsänen et al., 2016). ACT, like other psychotherapies, is

traditionally delivered face-to face. Described as an active therapy, ACT emphasises the importance of the therapeutic relationship, therapist modelling of core principles and use of exercises directly relevant to presenting difficulties in session (Harris, 2009). However, providing distanced and remote interventions may have a range of benefits, particularly in prevention and early support. A systematic review and meta-analysis of ACT self-help interventions identified that increased clinician guided support yielded greater improvements in outcomes (French et al., 2017). However, methodological quality and flaws in data reporting were argued to contribute to an 'over-selling' of self-help (French et al., 2017).

The increased focus on remote or distanced support may reflect the changing climate, with the pioneering of novel approaches to address the rising demands in mental health support alongside population level prevention. Youth often use the internet to gather information around mental health (Dooley & Fitzgerald 2012). The use of mobile apps, for example, offers a unique way to engage many people and has grown rapidly within mental health delivery (Price et al., 2014).

Strengths and limitations of the present review

A strength of the review was the systematic approach in identifying studies for inclusion and the broad key terms utilised to maximise sufficient scope of the literature. However, while the search terms focused on key terms relating to youth populations and attempted to be as inclusive as possible (i.e., included 'young adult'), it is plausible that not all papers were identified due to them being described as adult populations although participants mean age may have fallen between 15 and 24 years.

The current review initially aimed to include studies identifying participants aged between 15 and 24 years. However, due to limited studies including participants specifically within this age range, mean age was applied instead. Therefore, studies included older participants outside of the youth age range. Due to being unable to access study data, the true number of participants within the youth age range is unknown and therefore limits conclusions. While the present study has conceptualised the sample population as youth, it is more representative of a student population. Indeed, students aged between 18 and 24 years account for approximately two thirds of the UK student population (HESA, 2021). Five studies included participants who were all within the WHO (nd) definition of youth. Of note, only one was an RCT and quality rated above average (Lappalainen et al., 2021), indicating limited good quality research exploring interventions purely with youth. Given the distinct development period, research into empirically supported treatments for this age group are crucial.

Careful consideration towards defining an ACT intervention, ensuring key ACT components were incorporated, is a strength of the review. Decisions to exclude ACT interventions in combination with other treatments were made in order to better understand the unique contribution of ACT in improving outcomes. ACT is often incorporated with therapies to enhance effectiveness however very little is known about the effectiveness of ACT as a standalone intervention. For example, Lee et al.'s (2020) study was the first to explore ACT as an independent treatment for trichotillomania. It is critical to understand the unique contribution of ACT in developing its evidence base.

The present review ensured thorough searching of the available literature both through electronic searching and supplementing through hand searching of reference lists, which is a strength. Grey literature, however, were not included in the present review therefore not all available literature was included. This risks contributing to the publication crisis through potential underrepresentation of null or negative results (Paez, 2017). This may, therefore, pose as a factor contributing toward the inability to draw conclusions with certainty. Nonetheless, grey literature may be more biased due to its lack of peer review and presents further challenges for transparency of methodology and systematic searching (Boland et al., 2017).

Strengths and limitations of the POMRF quality rating tool

The POMRF can be unnecessarily punitive towards studies adopting remote self-help, such as web-based platforms, apps and self-help books. Given recent surges in remote working (Torous et al., 2020) alongside increasing demand for psychological support, self-help or web-based support may be well positioned to provide early help. Future research may benefit in adapting the POMRF rating system, which may include 'not applicable' as a response, with calculation of an average score based on the number of items applicable, which is then presented in percentage form. In addition, the POMRF quality cut-off criteria used in the present and other systematic reviews (e.g., Swain et al., 2015) allows for some comparisons between studies, however criteria are questionably arbitrary and specific to the review. The development of standardised cut-offs would be of benefit to allow for comparison to wider literature utilising the POMRF.

Two case studies (Juncos & Markham, 2016; Masuda et al., 2016) received higher quality ratings than two RCTs (Levin et al., 2017; Krafft et al., 2019). RCTs

are considered the 'gold standard' in intervention research however design alone does not equate to methodological rigour. In assigning POMRF points for study design, RCTs utilising a waitlist control are not provided any points, therefore not distinguishing them from case studies on this item. Given the nature of case studies, however, it is not possible to score on nine POMRF items (e.g., power analyses, handling of attrition), where RCTs could gain additional points. Both Levin et al. (2017) and Krafft et al.'s (2019) studies were pilot RCTs. The fundamental purpose of pilot studies is to test the feasibility of methodology and procedure before conducting a full scale RCT (Leon et al., 2011). However, hypothesis testing on efficacy of treatment was also investigated, hence inclusion in the review, which may explain lower quality ratings.

Recommendations for future research

Based on the literature reviewed, recommendations for future research are presented in Table 2.5.

Table 2.5

Recommendations for future ACT intervention research with youth

Area	Recommendations
Population	• Recruit participants from clinical and help-seeking youth populations. • Recruit participants from youth populations presenting with clinical mental health difficulties to develop the evidence base. • Researchers are recommended to seek new avenues in promoting research to better recruit male participants.
Design	• Very few studies compared ACT to another well-established treatment. Those that did typically found no significant differences between the conditions. To improve the quality of research, future studies should include an active control. • Use trained blind assessors for outcome measures to reduce researcher bias. • Control for concomitant treatments, such as medications or other psychological therapies. • Incorporate longer follow ups of 12 months or more to determine treatment maintenance.
Measures	• Given that ACT does not primarily intend to reduce psychological symptoms, include measures of wellbeing and/or QoL. • To address criticisms regarding mechanisms of change in psychological therapies, include measures of psychological flexibility, such as the AAQ-II (Bond et al., 2011).
Intervention	• Implement at least one component from all three psychological flexibility response styles (open, centred and engaged) as a core ACT intervention. • Interventions should be manualised or provide enough detail in the protocol for replication.
Analysis and presentation of results	• Calculate reliable change indices to complement analysis. • Include collect and present reasons for participants drop-out

Conclusion

With three quarters of mental health difficulties arising before the age of 24 (Kessler et al., 2007) there is a recognised need for mental health and wellbeing support for youth. Given the rising prevalence rates of mental health difficulties in youth, there is a surprising dearth of research conducted in clinical youth populations.

The current manuscript findings and conclusions have parallels to systematic reviews exploring ACT interventions with children (Swain et al., 2015; Harris & Samuel, 2020). Studies reviewed suggest that ACT may be beneficial, however conclusions are tentative and limited due to lack of methodological rigour.

Overall, there is emerging evidence for the efficacy of ACT on psychological symptoms, distress, QoL and wellbeing in youth. However, effectiveness beyond control groups is less consistent. Psychological flexibility, the proposed mechanism of change, is even less clear. However, no definitive conclusions can be drawn due to the generally low level of methodological quality and limitations to the present review. Few studies compared ACT to other well-established treatments. Those that did, hold promise that ACT may be as effective, although not superior, to other established treatments. Research efforts in future should focus on identifying empirically supported treatments for youth populations. This paper has made recommendations for future studies exploring the efficacy of ACT with young people.

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Supplemental information

- Effect direction plot for individual outcomes

Table 2.3

Effect direction plot of individual outcomes for each study

Study	POMRF Score	POMRF Rating	Study design	Psychological symptoms	Psychological distress	QoL and wellbeing	Psychological flexibility
Krafft et al. (2020)	21	Well above average	RCT	Social Anxiety ▲[a]	Distress ▲[a]	-	-
Lee et al. (2020)	21	Well above average	RCT	Hair-pulling ▲[a]	-	-	PF ▲[a]
Levin et al. (2020)	19	Well above average	RCT	Depression, anxiety and stress symptoms ▲[a]	Distress ▲[a]	Wellbeing ▲[a]	PF ▲[a]
Muto et al. (2011)	19	Well above average	RCT	Depression ▲[a] Anxiety ▲[a] Stress ▲[a]	Distress ▲[a]	-	PF ▲[a]

Study	**POMRF Score**	**POMRF Rating**	**Study design**	**Psychological symptoms**	**Psychological distress**	**QoL and wellbeing**	**Psychological flexibility**
Räsänen et al. (2016)	18	Above average	RCT	Perceived Stress ▲[a] Depression ▲[a2] Anxiety △[a] Stress △[a]	-	Wellbeing ▲[a]	PF △[a]
Lappalainen et al. (2021)	16	Above Average	RCT	iACT face Depression ▲[a]	-	Satisfaction with life △[a]	PF △[a]
				iACT Depression ▲[a]		Satisfaction with life ▲[a]	PF △[a]
Levin et al. (2019)	16	Above average	RCT	Overall symptoms ▲[a]	-	Wellbeing △[a]	PF △[a2]
Levin et al. (2016)	16	Above average	RCT	Depression ▼[a] Anxiety △[a] Stress △[a]	-	Wellbeing △[a]	PF △[a]

Study	POMRF Score	POMRF Rating	Study design	Psychological symptoms	Psychological distress	QoL and wellbeing	Psychological flexibility
Kocovski et al. (2019)	15	Below average	RCT	Social Phobia ▲[a] Social Anxiety ▲[a] Depression ▲[a]	-	Satisfaction with life ▲[a]	PF social anxiety ▲[a]
Levin et al. (2017)	12	Below average	RCT	Overall symptoms ▲[a]	-	Wellbeing ▲[a]	PF △[a]
Krafft et al. (2019) †	12	Below average	RCT	Depression △[a] Anxiety △[a] Stress △[a]	-	Wellbeing △[a]	-
Levin et al. (2015)	14	Below average	Pre-Post	Depression ▲[b] Anxiety ▲[b] Stress ▲[b]	-	Satisfaction with life △[b]	PF ▲[b]
Haeger et al. (2020)	12	Below average	Pre-Post	Depression ▲[b] Anxiety ▲[b] Stress ▲[b]	-	-	PF ▲[b]

Study	POMRF Score	POMRF Rating	Study design	Psychological symptoms		Psychological distress		QoL and wellbeing		Psychological Flexibility	
Gómez et al. (2014)	11	Well below average	Case series	Impulsivity Self-Control	▲[b] ▲[b]	-		-		PF	▲[b]
Twohig et al. (2006)	17	Above average	Multiple baseline design	Skin picking Hairpulling Anxiety Depression	Δ[b] Δ[b] Δ[b] ◁▷[b]	-		-		PF	Δ[b]
Juncos and Markham (2016)	14	Below average	Case study	MPA PA Social Anxiety	Δ[b] Δ[b] Δ[b]	Distress	Δ[b]	-		PF	Δ[b]
Masuda et al. (2016)	14	Below average	Case study	Disordered Eating	Δ[b]	Distress	Δ[b]	QoL	Δ[b]	PF Body image PF	▽[b] Δ[b]

Study	POMRF Score	POMRF Rating	Study design	Psychological symptoms	Psychological distress	QoL and wellbeing		Psychological flexibility	
Chapman and Evans (2020)	8	Well below average	Case study	-	-	Wellbeing	Δ^b	PF	Δ^b
								DNA-V discover	∇^b
								DNA-V advisor	∇^b
								DNA-V noticer	∇^b
								DNA-V values	Δ^b

Note: Sample Size: ▲large arrow >100; ▲medium arrow 10- 99; ▲small arrow <10.

Effect Direction: upward arrow = positive impact; downward arrow = negative impact; sideways arrows = no change/conflicting findings.

Statistical and clinical significance: black arrow $p < 0.05$; grey arrow $p > 0.05$; diagonal stripes = clinically significant change only; empty arrow = no statistics/data reported

† = Combined help seeking and student subsamples. PF = Psychological Flexibility

Superscript: statistical tests: controlled studies (including RCTs)—difference between control and intervention group at follow-up (unless stated); [a] difference in change between control and intervention group; [b] change within intervention group only; uncontrolled studies: Change since baseline (unless stated).

Subscript Numbers: number of outcomes included within category synthesis is 1 unless indicated otherwise in subscript next to effect direction

CHAPTER THREE

Bridging Chapter

Bridging Chapter

The systematic review explored the efficacy of ACT with youth for negative psychological outcomes (symptoms and distress) and positive psychological outcomes (wellbeing and QoL). Additionally, the proposed mechanism of change, psychological flexibility, was explored. ACT emphasises the importance of taking committed action in moving towards values despite the presence of difficult thoughts and feelings. Individuals are encouraged to identify Specific, Meaningful, Adaptive, Realistic and Time-framed (SMART; Harris, 2012) goals that connect with their values. Tapping into what really matters to an individual and encouraging values-based behaviour is pertinent to ACT, making life meaningful, rich and fulfilling (Ciarrochi & Kashdan, 2013).

Identifying values and goals can conjure up images of how we might view ourselves in the future. Possible selves theory postulates that not only do we generate visions for the future self that are hoped-for, representing our values, aspirations and goals, but also selves we expect or fear becoming (Markus & Nurius, 1986). Possible selves are deemed as essential in motivating behaviour (Markus & Ruvulo, 1989). Not only do possible selves provide future goal posts but they provide a point of reference for evaluating and interpreting the current self against (Markus & Nurius, 1986).

The unprecedented Coronavirus (COVID-19) pandemic has changed lives worldwide. In the UK, government policies were implemented in response to rising infection rates, such as closure of nonessential businesses, educational establishments and citizens permitted to ‘stay at home’ (GOV UK, 2020). Although imperative, such guidance has resulted in significant impacts on social isolation,

poor mental health and wellbeing, and job and income loss (Daly et al., 2020). Social isolation alone has been associated with increased depressive symptoms, suicide attempts and low self-esteem in young people (Holmes et al., 2020; Hall-Lande et al., 2007). A staggering one in ten youth have experienced job loss during COVID-19; double that of older employees (Major et al., 2020). Given such a drastic change in context and circumstance, it is unsurprising that over half of young people have reported changes to their future plans and greater concerns for future academic attainment (Major et al., 2020). Analysis from longitudinal data throughout the pandemic in the UK have identified subgroups who have been particularly impacted by worsening mental health and wellbeing, of note women and young people between 18 and 29 years (O'Connor et al., 2020; Pierce et al., 2020).

The following empirical paper will therefore shift focus towards understanding how the COVID-19 pandemic has impacted on youth's future possible selves, their activity and wellbeing. This will be viewed through the lens of possible selves' theory. The relationships between possible selves constructs, structured activity and wellbeing will be tested within a possible selves framework. Over the course of the pandemic, guidance has varied in response to infection rates and demands on resources. Such a rapidly evolving climate in the UK is relatively unknown during modern peace time (Dawson & Golijani-Moghaddam, 2020). Therefore, in order to provide context to the empirical paper, a timeline of UK resident COVID-19 guidance is presented in Table 3.1. Data collection for the empirical study took place between 25th June 2020 and 10th February 2021.

Table 3.1.
Timeline of COVID-19 restrictions in the UK

Date	Restriction summary
23rd March – 12th May 2020	Lockdown introduced • Instructed to stay at home, unless for medical needs, food shopping or work (if unable to work from home). • Closure of schools*, colleges and universities • Closure of non-essential businesses (excluding food retailers, food delivery, essential goods, service suppliers and hardware shops). • Exercise permitted once daily
13th May to 4th July 2020	• Those who cannot work from home are permitted to return to work • Education establishments gradually reopened
4th July – 14th September	• Local lockdowns introduced in parts of Leicestershire • Re-opening of pubs, hairdressers and restaurants
14th September	'Rule of six' – social gatherings above six, indoor and outdoor, are banned in England.
22nd September	10pm curfew for hospitality sector Return to working from home
5th November 2020 to 2nd December	Second national lockdown for 4 weeks • Education establishments remained open • Non-essential businesses closed • Unlimited exercise
2nd December to 6th January	Return to tiered restriction system (local lockdowns). Introduction of a new 4th tier to 'Stay at Home'.
6th January 2021 to 10th February 2021	Third national lockdown • Education establishments* closed, with remote learning instead. • Able to meet one other person from another household outside for exercise.

Note. *Schools remained open for vulnerable children or for those whose parents were key workers.

CHAPTER FOUR

Empirical Paper

Article prepared for submission to the International Journal of Adolescence and Youth (Guidelines for authors in Appendix C).

Exploring the Possible Selves, Structured Activity and Wellbeing of Youth During the COVID-19 Pandemic

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Abstract

Deterioration in mental health and wellbeing of youth, exacerbated by COVID-19, have prompted calls for prevention and early intervention. Understanding factors associated with wellbeing are critical to informing evidence-based practice. Possible selves, defined as cognitive representations of the future self, may be one such factor. A cross-sectional design exploring relationships between possible selves, activity and wellbeing in a non-clinical sample of 120 youth was conducted. Descriptive data on hoped-for, expected and feared possible selves are presented. Most participants reported feeling less hopeful, more fearful and had lower expectations for the future in response to the pandemic, with wellbeing low across the sample. Optimism toward achieving hoped-for selves was significantly associated with increased structured activity and higher wellbeing. However, exploratory analyses testing moderation and mediation models were unsupported. Findings suggest encouraging structured activity and enhancing optimism for hoped-for selves may offer promising interventions for supporting youth wellbeing during COVID-19 recovery.

Keywords: *Youth, Possible Selves, Wellbeing, Activity, Time Use, COVID-19*

Introduction

The Coronavirus Disease 2019 (COVID-19) Pandemic

On 11th March 2020, the Director-General of the World Health Organization (WHO) declared the COVID-19 outbreak as a worldwide pandemic (WHO, 2020). In response to infection rates, the United Kingdom (UK) government announced social distancing measures and lockdown restrictions. This involved temporary closure of education establishments along with other non-essential businesses. Citizens were required to stay home, unless for food, health reasons or work purposes that could not be completed from home (GOV, 2020). Research efforts toward understanding the psychological impact of such imperative, yet restrictive, policies on the mental health and wellbeing of young people are emerging.

Youth mental health and wellbeing

Prevalence rates of mental health difficulties appear to increase as a young person develops, with research suggesting a six-fold increase between the ages of four to 24 (Pitchforth et al., 2019). Steep increases in mental health difficulties, particularly emotional disorders, in 17 to 19-year olds, suggest young people are a high-risk group (Sadler et al, 2018). Indeed, anxiety and depression are commonly experienced mental health difficulties in students (Zivin et al., 2009; Sadler et al., 2018).

Further deteriorations of youth mental health and wellbeing are emerging since the onset of the COVID-19 pandemic. Large survey studies have identified

elevated psychological distress (Dawson & Golijani-Moghaddam, 2020) and poorer wellbeing (Smith et al., 2020).

Mental Health and Wellbeing

There has been a shift of focus from impairments and deficits to understanding factors promoting wellbeing (McNulty & Fincham, 2012). Ryan and Deci (2001) suggest that wellbeing incorporates both affect and psychological functioning, with reference to hedonic and eudaimonic perspectives. The hedonic perspective incapsulates experiences of happiness and subjective wellbeing, whereas the eudaimonic perspective refers to self-realisation and psychological functioning (Ryan & Deci, 2001). A large UK study found that distress and wellbeing have been worsening since 2011 (Pitchforth et al., 2019). Conversely, higher levels of wellbeing have been associated with positive outcomes, such as better relationships, fewer symptoms of depression, longer lives, greater financial success, more social support, better health and job satisfaction (Schiffrin & Nelson, 2010; Winefield et al., 2012). These findings suggest the importance of attending to the whole spectrum of mental health, with interventions focusing not only on psychological symptoms but on cultivating positive mental health before such symptoms arise (Furlong et al., 2014).

Possible Selves Theory

Possible selves, defined as imagined scenarios of the self in the future (Markus & Nurius, 1986), have been implicated as a potential factor contributing to wellbeing (Massey et al., 2008). Possible selves consist of hoped-for selves (selves

we would like to become, e.g., a teacher), expected selves (selves we believe will be realised, e.g., a university student) and feared selves (selves we are afraid to become, e.g., unemployed). Possible selves are proposed as providing the link between the self-concept and motivation, through envisioning change in the self (Markus & Nurius, 1986). Possible selves have been implicated in increased wellbeing, life satisfaction and academic achievements (see Massey et al., 2008, for a review). It is likely the COVID-19 pandemic has significantly impacted on young people's future self-concept, with 62% indicating changes to their long-term plans and 68% reporting fears that future academic achievement would be hampered (Major et al., 2020). Given the negative impact of the pandemic on wellbeing, further consideration of the role of possible selves appears pertinent.

There are various conditions and characteristics whereby possible selves may more efficiently instigate and motivate behaviour (de Place & Brunot, 2020; Oyserman & James, 2011). One such characteristic relates to the specificity of possible selves. When defining possible selves, the better developed a possible self is, the more motivating it is hypothesised to be for the individual (Stevenson & Clegg, 2011). Clarity of possible selves have been associated with greater life satisfaction and reduced negative affect, such as depression and anxiety (McElwee & Haugh, 2010).

Oyserman and Markus (1990) also found that feared possible selves counterbalanced with hoped-for selves were linked with higher levels of motivation, demonstrated by an increased likelihood of engaging in positive behaviour. The effect is considered additive; motivation is greater when there is balance rather than a possible self in one domain alone (Leondari & Gonida, 2008).

Being unable to attain hoped-for selves may increase the likelihood of experiencing depression (Oyserman & Fryberg, 2006; Strauman, 2002). Interventions with undergraduate students aimed at imagining the best possible self, such as the Best Possible Selves' intervention (BPS; King, 2001), have demonstrated improvements in wellbeing (King, 2001) and performance (Ruvolo & Markus, 1992). The BPS (King, 2001) is suggested to increase optimism for achieving hoped-for selves and positive affect, arguably enabling more effective goal pursuit (Loveday et al., 2018). Thus, optimism for achieving a hoped-for self appears important for wellbeing.

Based on possible selves literature, specificity, balance and optimism of hoped-for selves are considered key elements involved in the construct of possible selves and will be considered in the current study.

Activity, mental health and wellbeing

Literature has long documented associations between participation in structured activity and positive outcomes. Although variability exists in how structured activity is defined, engagement in domains such as employment, education, voluntary work and leisure activities represent meaningful goals for young people (Hodgekins et al., 2015; Fletcher et al., 2003). Research supports associations between increased time spent in structured activity and higher levels of wellbeing (Fletcher et al., 2003), life satisfaction (Gilman, 2001), social outcomes (Mahoney et al., 2005) and academic achievement (Cooper et al., 1999) along with reductions in emotional and behavioural difficulties (Hopko et al., 2003; Kantomaa et al., 2008). Individuals not in education or employment (NEET) are at increased risk of social isolation, reduced wellbeing and depression (Berry et al., 2019; O'Dea

et al., 2014; Goldman-Mellor et al., 2016; Jongbloed & Giret, 2021). Indeed, social disability, defined as engagement in less than 30 hours of structured activity per week (Hodgekins et al., 2015), can precede mental health difficulties (Cross et al., 2017). Given the unprecedented changes to daily activities since the onset of the COVID-19 pandemic, impacts on wellbeing warrant investigation. Emerging research suggests that youth appear disproportionately affected by the pandemic, with one in ten experiencing job loss (Major et al., 2020).

The relationship between possible selves, activity and wellbeing

Although increased activity is associated with higher levels of wellbeing, the type of activity appears important and, to promote wellbeing, should ideally be aligned with individual values or aspirations (Lejuez et al., 2001; Lyubomirsky et al., 2005). Thus, it seems likely that considering possible selves in conjunction with activity levels might help to better explain the relationship with wellbeing. These future-oriented representations are considered a key part of motivation, inspiring individuals to behave toward making their hoped-for selves more likely (Markus & Nurius, 1986). Possible selves are therefore suggested to be linked to behaviour, motivating individuals toward attaining hoped-for selves or avoiding feared selves. In turn, this may positively impact wellbeing.

The present study

The COVID-19 pandemic has changed daily life, with emerging literature identifying the detrimental impacts on youth wellbeing and future plans (Major et al., 2020). Building on this, the present study will describe the hoped-for, expected and feared possible selves generated by youth during the COVID-19 pandemic and

report the impact of the pandemic on their hopes and fears for the future. The study also aims to describe the types of activities youth were engaging in during the COVID-19 pandemic, as well as levels of wellbeing.

The current study will then explore relationships between possible selves, structured activity and wellbeing in young people. Given the prior associations between possible selves and wellbeing, we expect to see a positive relationship between optimism, specificity and balance of possible selves and wellbeing. We also expect to see a positive relationship between time spent in structured activity and wellbeing. If possible selves motivate individuals to engage in behaviours to achieve hoped-for selves or avoid feared selves, it could also be hypothesised that there will be a relationship between possible selves and structured activity. Indeed, the relationship between possible selves and wellbeing might be mediated by the impact of possible selves on structured activity. Alternatively, the well-established relationship between activity and wellbeing may be moderated by possible selves. However, there has been no research to date exploring the nature of the relationship between all three constructs in a UK youth population. It is hoped that a further understanding of these relationships could help identify factors which may inform COVID-19 recovery and future wellbeing initiatives.

Research questions and hypotheses:

Primary research questions:

1. How do youth describe their possible selves during the COVID-19 pandemic?
2. What activities are youth engaging in during the COVID-19 pandemic?

Primary hypotheses:

1 More optimistic, specific and balanced possible selves will be associated with higher levels of wellbeing.

2 Spending increased time (hours per day) in structured activity will be associated with higher levels of wellbeing.

Exploratory research questions:

3 What is the nature of the relationship between possible selves, time use and wellbeing?

   a. Do possible selves moderate the relationship between structured activity and wellbeing?

   b. Is time spent in structured activity a mediator of the relationship between possible selves and wellbeing?

Method

Design

This study utilised a cross-sectional observational design, providing descriptive data on participants' possible selves, activity levels and wellbeing. A correlational design was used to investigate the relationships between optimism, specificity and balance of possible selves, wellbeing and structured activity.

Participants

An opportunity sample of youth aged between 16 and 25 years residing in the UK were recruited through educational establishments, including sixth forms, colleges and universities, and through a Norfolk youth charity. A priori calculation

informed sample size (Faul et al., 2007). Participants were recruited during the COVID-19 pandemic, between June 2020 and February 2021. There were no exclusion criteria; the study aimed to be as inclusive as possible, to gain a broad perspective of youth in the UK.

Outcome Measures

Demographic Information

Demographic information was collected on age, gender, ethnicity and outward postcode (appendix I). The outward postcode was used to calculate socio-economic deprivation using the English indices of multiple deprivation 2019 (IMD; Ministry of Housing, Communities & Local Government, [MHCLG], 2019). The policies used in the management of COVID-19, although imperative, have impacted socioeconomically (Nicola et al., 2020), which in turn may impact mental health and wellbeing through employment and financial insecurity (Frasquilho et al., 2016). Therefore, areas experiencing deprivation prior to the COVID-19 pandemic may be particularly vulnerable. Inclusive of measurements on several domains (e.g., income, employment, health, education, crime, access to services and living environment), the IMD is considered a wider measure of deprivation rather than low income alone (MHCLG, 2019).

Possible Selves

The Possible Selves Questionnaire (PSQ; appendix J) is a structured survey based on the format described by Oyserman and Markus (1990). Participants were required to generate three hoped-for, three expected and three feared possible selves

in an open-ended format. The content was coded using a manual previously developed (Lee, 2020; appendix K), into domains of: personal development, possessions, emotional/physical wellbeing and interpersonal relationships. For each possible self, the participant rated three questions on a five-point likert scale (0 = not at all to 4 = very much): 'how much does this describe you now?', 'how much will this describe you in the future?' and 'how much would you like this to describe you?'.

Optimism, specificity and balance were coded using a previously developed manual (Lee, 2020; appendices L – N). To calculate optimism, a score ranging from 0 to 12 was derived through summing the ratings for each hoped-for self from the question 'how much will this describe you in the future?'. The total score was divided by the number of hoped-for selves generated, providing an average score. The average score represents the level of optimism toward successfully achieving a hoped-for possible self (Clark, 2016; Lee, 2020).

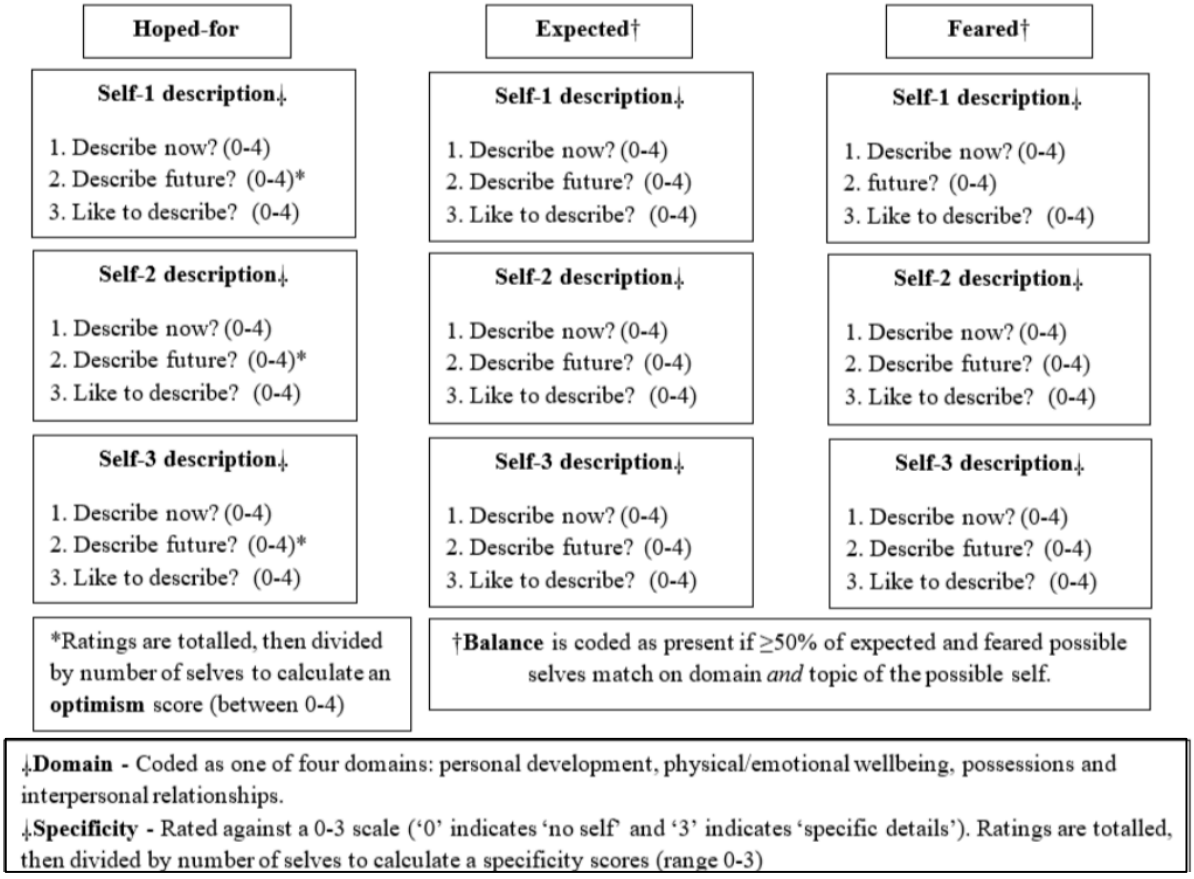
The specificity of possible selves was coded according to the level of detail generated, providing a score between zero (no possible self) to three (specific details; Lee, 2020). Specific details required at least one reference to roles, places, time-frames or people and other descriptive detail.

Balance of possible selves required two or three hoped-for selves to be counterbalanced by feared selves within the same domain. If less than 50% were balanced, this was scored zero and determined 'not balanced' (Lee, 2020), with a binary score of one provided if possible selves were balanced. A diagram demonstrating coding is presented in Figure 4.1.

An additional three questions on whether future hopes, fears and expectations had changed since the onset of the COVID-19 pandemic were included, with three

responses: yes – more hopeful/fearful/higher expectations, yes – less hopeful/fearful/ lower expectations and no – about the same.

Figure 4.1
Diagram depicting possible self data with coding for optimism, balance and specificity (adapted from Lee, 2020).



Wellbeing

The Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS; Stewart-Brown et al., 2009; Tennant et al., 2007; appendix O) is a positively phrased, seven item self-report measure with responses ranging from one (none of the time) to five (all of the time). It includes both hedonic and eudemonic wellbeing,

capturing psychological functioning and subjective wellbeing. Items are summed to provide an overall wellbeing score. Total raw scores are converted into metric scores (Warwick Medical School [WMS]; 2021). The measure's parent scale, the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), has demonstrated good internal consistency ($\alpha = 0.87$; Clark et al, 2011). The full scale and shortened version are highly correlated ($r = 0.954$; Stewart-Brown et al, 2009). The measure has been validated for use with individuals aged between 13 and 74 years old. Internal consistency of the SWEMWBS was good in the present study ($\alpha = 0.81$).

Time Use

The Time Use Diary (Eurostat, 2018; appendix P) is the most frequently used data collection method in adolescent time diary research (Hunt & McKay, 2015). Participants were asked to retrospectively complete a 24-hour diary based on the last weekday. Depending on day of completion, this was either a 'yesterday diary' or required recall of the previous weekday. As recommended in the Harmonised European Time Use Survey guidelines (Eurostat, 2018), participants were asked to record their main activity, secondary activity, location and presence of others. Due to the burden of completing time use diaries and additional measures in the study, intervals for activities were 30 minutes.

Activities were coded into ten domains: personal care, employment, study, household and family care, voluntary work, sport and outdoor exercise, entertainment, hobbies, mass media and travel (Eurostat, 2018). Time spent in each activity was calculated into hours per day. A composite score for structured activity was calculated through combining employment, study, household and family care,

voluntary work and sport and outdoor exercise, based upon the calculation of structured activity from the Time Use Survey (Hodgekins et al., 2015).

Additional COVID-19 Questions

Participants were asked their current isolation status, previous or current experience of COVID-19, recommendations to self-isolate by the government and whether they had experienced losses related to COVID-19 (e.g., bereavement, loss of income etc; appendix Q).

Ethics

Approval was granted by the Faculty of Medicine and Health Sciences Research Ethics Committee at the University of East Anglia (ref: 2019/20-083; appendices G-H).

Procedure

Participants were recruited from a variety of sources. The study advert was shared via social media accounts by the primary researcher and a Norfolk youth charity. Four educational establishments in Norfolk (UK) electronically distributed the survey to students through existing communication platforms (e.g., email).

The study was completed electronically via a weblink to Jisc Online Surveys. The weblink contained the information sheet and consent form (appendices D-E). Once consent was provided, participants completed the anonymous survey, providing demographic details and then outcome measures. Once all measures had been completed, taking approximately 40 minutes, participants were debriefed

(appendix F) and thanked for their time. Participants were entered into a prize draw to win a £25 voucher.

Statistical analysis

Twenty per cent of possible self and time use data were coded by the primary researcher (JS) and independently by a second rater (JH). Cohen's Kappa coefficient was between 0.79 to 0.93, indicating moderate to almost perfect reliability (McHugh, 2012).

Data was analysed using the Statistical Package for the Social Sciences (SPSS; version 27). Visual inspection of data and kurtosis statistics indicated skew in the normal distribution of wellbeing data (Field, 2013). Robust bootstrapping procedures (with 1000 resamples) were applied to account for variations in the distribution. Non-parametric testing was conducted for possible selves variables due to ordinal level measurement.

Results

Sample characteristics

A total sample of 120 participants were recruited. Demographic data are presented in Table 4.1.

Table 4.1
Demographic, socio-economic deprivation data and hours spent per week in main activities self-reported by sample

	N (%)	Mean (SD)	Range	Missing %
Gender	120 (100)			0%
Male	26 (21.67)			
Female	87 (72.5)			
Other	7 (5.83)			
Age	120 (100)	20.68 (2.56)	16-25	0%
16 to 18 years	27 (22.5)			
19 to 25 years	93 (77.5)			
Ethnicity	120 (100)			0%
White British	94 (78.33)			
Any other White background	9 (7.5)			
Chinese	3 (2.5)			
Any other mixed background	3 (2.5)			
African or African British	2 (1.67)			
Indian or Indian British	2 (1.67)			
Any other Asian background	2 (1.67)			
Any other ethnic group	2 (1.67)			
Index of Multiple Deprivation (IMD) Deciles*	118 (98.33)	5.7 (2.5)	1-10	1.67%
1	2 (1.69)			
2	18 (15.25)			
3	5 (4.24)			
4	18 (15.25)			
5	11 (9.32)			
6	9 (7.63)			
7	27 (23.73)			
8	4 (3.39)			
9	22 (18.64)			
10	2 (1.69)			
Hours (weekly) spent in main activity	120 (100)			0%
Education	102 (85)	29.3 (13.93)		
Employment	16 (13.33)	37.3 (9.35)		
Caregiving	1 (0.83)	40 (0)		
NEET	1 (0.83)	N/A		

Note. * IMD deciles range from 1 = most deprived to 10 = least deprived
NEET = Not in Education, Employment or Training. Percentage figures rounded to two decimal places.

Descriptive statistics

Current isolation status based upon UK government guidelines are presented in Table 4.2, alongside participant COVID-19 related experiences.

Table 4.2
Descriptive statistics on impact of COVID-19

COVID-19 statements	*n*	%
Have you had Coronavirus (COVID-19)?		
Yes, diagnosed and recovered	8	6.67
Yes, diagnosed and still unwell	0	0
Not formally diagnosed but suspected	15	12.5
Not that I know of / No	97	80.83
What is your current isolation status?		
I am fully self-isolating, not leaving my home at all	7	5.83
I am staying at home, only leaving for exercise, food shopping, accessing medication, or other activity permitted by government guidelines	57	47.5
I am staying at home, only leaving for exercise, food shopping, accessing medication or other activity permitted by government guidelines AND going to work	24	20
I am following the stay-at-home recommendations but have met with people who live outside my household	22	18.33
I am not following the stay-at-home recommendations but am adhering to social distancing when in public (e.g., staying 2m away from others)	10	8.33
I am not following the stay-at-home recommendations or social distancing when I am out	0	0
Have you experienced any of the following due to Coronavirus?		
Serious illness of a family member or friend	21	17.5
Death of a family member or friend	16	13.33
Difficulties paying bills, rent or mortgage	23	19.17
Difficulties paying for essentials e.g., food or medicine	11	9.17
Loss of job/income	24	20
I have not experienced any of these	63	52.5

There was no significant association between low and high socioeconomic deprivation and whether participants reported negative COVID-19 experiences or not, X^2 (1) = 0.004, p = .95. Through calculation of the odds ratio, the odds of

experiencing a negative COVID-19 outcome was 1.03 times higher if living in an area of higher deprivation compared to lower deprivation.

Wellbeing

Descriptive statistics on wellbeing, measured by the SWEMWBS, are presented in Table 4.3. Wellbeing was categorised into low, average and high wellbeing according to UK population norms from Health Survey England 2011 data provided by WMS (2021).

Table 4.3

Descriptive statistics on wellbeing scores from the sample, categorised into low, average and high wellbeing compared to population norms.

	n	Median	Mean (SD)
Present study SWEMWBS total	120	17.98	18.4 (3.42)
Low wellbeing (7 – 19)*	92	17.43	17.06 (2.23)
†Average to high wellbeing (20 – 35)*	28	22.35	22.78 (2.71)
Population norms from the Health Survey for England data 2011	7196	23.21	23.61 (3.9)

Note. * Cut offs based on UK population norm cut-offs provided from 2011 Health Survey for England data (WMS, 2021).
† Only one participant reported a score categorised into high wellbeing, therefore average and high are presented together.

Wellbeing scores between participants who reported at least one negative COVID-19 experience (n = 57, M = 18.26, SE = 0.51) and those who did not report any negative COVID-19 experiences (n = 63, M = 18.52, SE = 0.38) were explored. The difference, -0.27, BCa 95% CI [-1.4, 1.07], was not significant $t(118) = -0.42$, $p = .672$, $d = 0.07$.

Research question 1: how do youth describe their possible selves during the COVID-19 pandemic?

A variety of possible selves were generated, which were coded into domains of personal development, possessions, emotional/physical wellbeing and interpersonal relationships. Examples of possible selves reported are presented in Table 4.4.

Table 4.4

Examples of possible selves generated within each content domain for hoped-for, expected and feared selves.

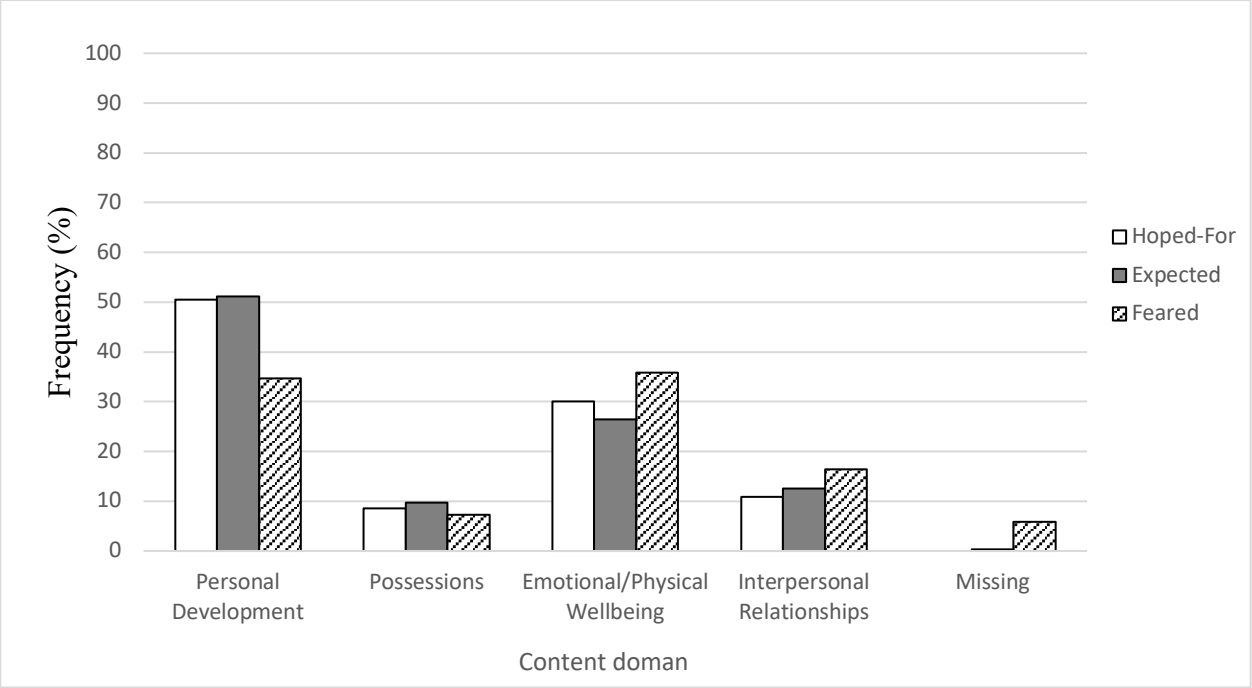
Content category	Hoped-For	Expected	Feared
Personal Development	"A conservationist working mainly in Africa"	"Moving onto a master's degree"	"Not being qualified enough for what I wish to do"
Possessions	"A homeowner"	"Struggling to own or rent a house I really like"	"Debt"
Emotional/Physical Wellbeing	"Happy"	"Stressed"	"I fear I will be anxious due to the pandemic"
Interpersonal Relationships	"To get married and have children"	"a dad"	"I will be alone"

The content of hoped-for and expected possible selves related primarily to personal development (50.56% and 51.11% respectively). However, feared selves mostly related to emotional and physical wellbeing (35.83%) and personal development (34.72%). Frequencies on content domains are presented in Figure 4.2. Of note, 5.83% of feared possible selves were coded as missing due to not reflecting a future self (e.g., "higher living expenses/taxes").

Most participants (n = 106, 88.33%) generated at least one hoped-for self pertaining to personal development within education or employment. When also considering expected and feared selves, all but one participant reported future selves relating to education or employment (n = 119, 99.17%).

Figure 4.2

Histogram depicting frequencies of possible selves content



Participants were asked three questions for each possible self, exploring how much the self describes them now, in the future and how much they would like this to describe them. Descriptive statistics are presented in Table 4.5, along with specificity and optimism scores.

Table 4.5

Descriptive statistics on the likert questions for all possible selves generated, specificity of possible selves and optimism

	Hoped-for			Expected			Feared			Total average score		
Likert questions	*n*	Median	Mean (SD)	*n*	Median	Mean (SD)	*n*	Median	Mean (SD)	*n*	Median	Mean (SD)
How much does this describe you now?	360	1	1.44 (1.25)	359	2	1.81 (1.42)	340	2	1.89 (1.39)			
How much will this describe you in the future?	360	3	2.88 (1)	359	3	3.16 (0.82)	340	2	1.62 (1.19)			
How much would you like this to describe you?	360	4	3.73 (0.61)	359	4	3.03 (1.44)	340	0	0.27 (0.81)			
Specificity score	120	1.33	1.51 (0.45)	120	1.33	1.36 (0.44)	118	1	1.31 (0.41)	120	1.33	1.39 (0.33)
Optimism score	120	3	2.88 (0.79)									

Note.
Participants rated responses on the following five-point likert scale: 0 = not at all, 1 = a little, 2 = somewhat, 3 = quite a bit and 4 = very much.

To explore how well participants hoped-for, feared or expected selves described the current self, a Kruskal Wallis test was conducted, which was significant, $H(2) = 20.64$, $p < 0.001$. Pairwise comparisons with Bonferroni adjusted *p*-values identified a significant difference between hoped-for and expected selves ($p = .002$, $r = -.13$) and hoped-for and feared selves ($p < .001$, $r = -.16$). No significant difference was found between expected and feared selves ($p = 1.00$, $r = -.03$). This suggests that expected and feared possible selves better described the current self than hoped-for selves.

Table 4.6
Proportion of balance for hoped-for vs. feared possible selves

Balance	Hoped-for - Feared	
	n	%
No	73	60.83%
Yes	46	38.33%
Missing	2	1.67%

Balance between hoped-for and feared selves are presented in Table 4.6. The majority of participants did not have 50% or more of their hoped-for selves counterbalanced with a feared self related to the same topic within the same domain ($n = 73$, 60.83%). Conversely, 38.33% of participants did demonstrate balance, suggesting additional motivation toward achieving hoped-for selves and avoiding feared selves.

Impact of COVID-19 on possible selves

Participants were asked questions exploring the impact of the COVID-19 pandemic on possible selves. The majority of participants felt less hopeful (52.5%),

more fearful (77.67%) and had lower expectations for themselves in the future (49.17%; see Table 4.7 for frequencies and percentages).

A Mann Whitney U test exploring differences between those who reported negative COVID-19 experiences (as outlined in Table 4.2) to those who reported no experiences (mean rank = 60.04) on optimism for possible selves (mean rank = 60.91) was non-significant, U = 1769.5, z = -0.14, p = .89.

Table 4.7
Frequencies on the impact of COVID-19 on perceived future possible selves

	n	%
Hoped-for selves		
More hopeful	14	11.67
Less hopeful	63	52.5
About the same	43	35.83
Expected selves		
Higher expectations	16	13.33
Lower expectations	59	49.17
About the same	45	37.5
Feared selves		
Less fearful	9	7.5
More fearful	92	76.67
About the same	19	15.83

On average, participants who reported feeling less hopeful towards their future since the onset of COVID-19 reported lower wellbeing (M = 17.04, *SE* = 0.42) than those who felt the same or more hopeful (M = 19.9, *SE* = 0.38). The difference, 2.87, BCa 95% CI [1.74, 3.99], was significant $t(118) = 5.04$, $p < .001$, representing a large effect ($d = 0.93$).

Similarly, participants who reported lower expectations for their future since COVID-19 had lower wellbeing (M = 17.51, *SE* = 0.42) compared to participants reporting the same or higher expectations (M = 19.35, *SE* = 0.43), on average. The

difference, 1.84, BCa 95% CI [0.68, 3.21], was significant, $t(118) = 3.05$, $p = .002$, representing a medium effect size ($d = 0.56$)

Participants who reported feeling more fearful for the future since COVID-19 reported lower wellbeing (M = 18.33, *SE* = 0.85), on average, compared to participants reporting feeling the same or less fearful (M = 18.61, *SE* = 0.85). However, the difference, 0.27, BCa 95% CI [-1.45, 2.21], was small and not significant, $t(118) = 0.37$, $p = 0.775$, $d = 0.07$. Levene's test indicated equal variances ($F = 0.354$, $p = .55$).

Research question 2: what activities are youth engaging in during the COVID-19 pandemic?

Most participants reported their main activity as education ($n = 102$, 85%), spending an average of 29.3 hours per week studying (SD = 13.93). See Table 4.8 for descriptive statistics on time spent in hours per category. No entertainment or outdoor leisure activities were observed throughout participant diaries. The majority of time in hours was spent at home (M = 20.91, SD = 4.77).

Table 4.8
Descriptive statistics on hours per day spent in activities and location

Activity	*n*	Min-Max	Median	Mean (SD)
Personal Care*	120	6 - 20.5	11	11.16 (2.34)
Employment	25	0 - 12	0	1.62 (3.43)
Study	81	0 - 14	3	3.4 (3.38)
Household and Family	93	0 – 7.5	1	1.41 (1.46)
Voluntary work	6	0 – 2.5	0	0.07 (0.36)
Socialising	62	0 – 9.5	0.5	1.39 (1.95)
Sports/outdoor exercise	38	0 - 6	0	0.5 (1.02)
Hobbies	57	0 - 13	0	1.5 (2.51)
Mass Media	100	0 – 12.5	2.5	2.52 (2.21)
Travel	38	0 - 3	0	0.4 (0.73)
Unspecified	3	0 – 2.5	0	0.04 (0.29)
Total structured activity†	117	0 - 15	7.5	7 (3.47)
Location				
Home	118	0 - 24	23	20.91 (4.77)
Workplace	12	0 - 14	0	0.94 (2.98)
Education establishment	9	0 – 6.5	0	0.35 (1.33)
Outside other	60	0 - 12	0.25	1.33 (2.78)
Unspecified	11	0 - 24	0	0.48 (2.44)

Note. *Personal care includes sleep. †Structured activity calculated through amalgamation of hours spent in employment, study, voluntary work, housework/family care and sports/outdoor exercise.

Participants mostly reported their diary representing an ordinary day during the COVID-19 pandemic (n = 93, 77.5%) as opposed to an unusual day (n = 27, 22.5%).

Primary hypothesis 1: more optimistic, specific and balanced possible selves will be associated with higher levels of wellbeing.

The correlation matrix is presented in Table 4.9. Higher levels of wellbeing were significantly associated with greater optimism for hoped-for selves (r_s = .343, 95% BCa CI [0.18, 0.5], p <.001). Specificity of possible selves was not significantly correlated with any other variables.

A biserial correlation was calculated to explore the relationship between balance (hoped-for to feared possible selves) and wellbeing, which was non-significant (r_b = .07, SE = 0.117, p = .55, two tailed).

Table 4.9

Correlation matrix exploring relationships between variables

Variable		1	2	3	4	5	6	7
1. Gender	Pearson	-						
	Sig.	-						
	BCa CI	-						
2. Age	Pearson	.059	-					
	Sig.	.537	-					
	BCa CI	-0.11, 0.22	-					
3. Wellbeing	Pearson	-.019	.105	-				
	Sig.	.839	.255	-				
	BCa CI	-0.23, -.2	-0.1, 0.28	-				
4. Structured Activity	Pearson	.171	.346*	.331*	-			
	Sig.	.07	<.001	< .001	-			
	BCa CI	-0.02, 0.33	0.2, 0.47	0.17, 0.48	-			
5. Optimism	Spearman	.135	-.007	.343*	.189†	-		
	Sig.	.153	0.943	< .001	.039	-		
	BCa CI	-0.07, 0.34	-0.17, 0.15	0.18, 0.5	0.02, 0.35	-		
6. Specificity Total	Spearman	.102	.025	.055	.110	-.02	-	
	Sig.	.287	.794	.55	.23	.83	-	
	BCa CI	-0.11, 0.3	-0.18, 0.23	-0.13, 0.23	-0.7, 0.29	-0.21, 0.16	-	
7. IMD	Spearman	-.05	-.175	-.191†	-.223†	-.036	-.019	-
	Sig.	0.599	.058	.038	.015	.699	.841	-
	BCa CI	-0.22, 0.13	-0.36, 0.01	-0.36, -0.02	-0.38, -0.05	-0.23, 0.15	-0.19, 0.16	-

Note. $N = 120$. * Correlation significant at Bonferroni adjusted significance of $p = < .007$ (2-tailed); † Correlation is significant at $p < .05$ (2-tailed) without Bonferroni correction; BCa = Bias corrected and accelerated 95% confidence intervals, based on bootstrapping of 1000 samples. IMD = Index of Multiple Deprivation

Primary hypothesis 2: spending increased time (hours per day) in structured activities will be associated with higher levels of wellbeing.

Pearson's correlation coefficients demonstrated hours spent in structured activity was significantly associated with greater wellbeing, (r = 0.331, 95% BCa CI [0.17, 0.48], p < .001).

Exploratory research question 3a: do possible selves moderate the relationship between structured activity and wellbeing?

Optimism, but not specificity or balance, was significantly associated with wellbeing and structured activity, and was the only possible self construct tested within a moderation model. To test the prediction that optimism moderated the relationship between structured activity and wellbeing, data was analysed using the bootstrapping method (with 5000 samples) via the PROCESS macro for SPSS (Hayes, 2017). Age and IMD were entered as covariates within the model, due to their association with wellbeing and structured activity. The overall regression model was significant, with optimism, structured activity and the interaction, along with the covariates of age and IMD, accounting for 24.15% of the variance in wellbeing, $F(5, 112) = 7.13$, $p < .001$, $R^2 = .24$. The linear regression models are presented in Table 4.10. When exploring the interaction of optimism and activity, this did not significantly predict wellbeing (b = 0.1, 95% CI [-0.09, 0.29], t = 1, p = .32), indicating no moderation effect.

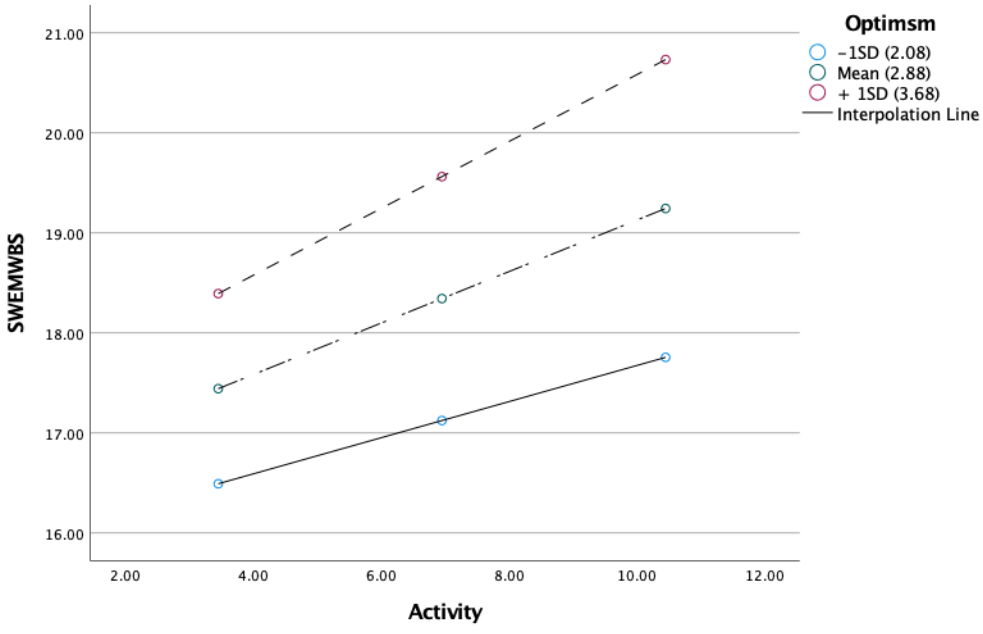
Table 4.10
Linear model of predictors of wellbeing

	b	SE B	*t*	*p*
Constant	13.81	3.23	4.27	$p < .001$
	[7.4, 20.21]			
Activity	-0.02	0.28	-0.07	$p = .94$
	[-0.57, 0.53]			
Optimism	0.86	0.72	1.19	$p = .24$
	[-0.57, 2.29]			
Activity x Optimism	0.1	0.1	1	$p = .32$
	[-0.09, 0.29]			
Age	0.03	0.12	0.26	$p = .79$
	[-0.2, 0.26			
IMD	-0.6	0.12	-0.54	$p = .59$
	[-0.29, 0.17]			

Note. $R^2 = 0.24$

The linear relationships have been depicted graphically in Figure 4.3, demonstrating no interaction effect of wellbeing and structured activity at different levels of optimism.

Figure 4.3
Graph demonstrating changes in wellbeing and structured activity based on low, medium and high optimism scores

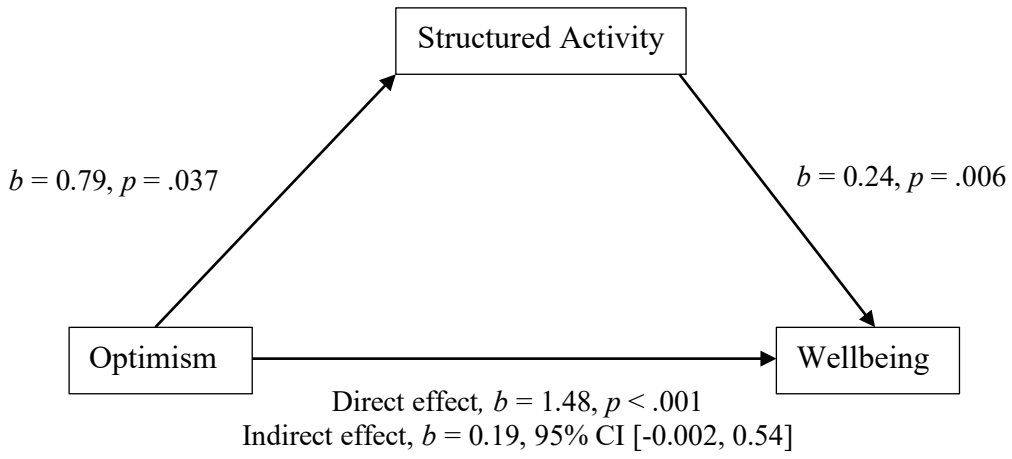


Note.
Optimism scores categorised -1SD = low, mean = medium and +1SD = high.

Exploratory research question 3b. is time use a mediator of the relationship between possible selves and wellbeing?

Mediation analysis was conducted through PROCESS for SPSS, using the bootstrapping method with 5000 samples (Hayes, 2017). Optimism was entered as the predictor variable, wellbeing as the dependent variable and structured activity as the mediating variable. Age and IMD were entered as covariates due to their association with structured activity and wellbeing. Results are presented in Figure 4.4, with age and IMD omitted from the diagram for clarity. The direct effect of optimism on predicting wellbeing was significant, $\beta = 0.35$, $b = 1.48$, $t(113) = 4.15$, $p < .001$, 95% BCa CI [0.78, 2.19]. Optimism significantly predicted the mediator, structured activity, $\beta = 0.18$, $b = 0.79$, $t(114) = 2.11$, $p = .037$, 95% BCa CI [0.05, 1.5]. Structured activity was a significant predictor of wellbeing, $\beta = 0.25$, $b = 0.24$, $t(113) = 2.78$, $p = .006$, [0.07, 0.42]. Indirect effect bias-corrected and accelerated (BCa) bootstrapped confidence intervals (CI) transgressed zero indicating no mediation, $\beta = 0.05$, $b = 0.19$, 95% BCa CI [-0.002, 0.54].

Figure 4.4
Model testing optimism as a predictor of wellbeing, with structured activity as a mediator. Confidence intervals (CI) for the indirect effect are BCa bootstrapped CI based on 5000 samples.



Discussion

The current study had multiple aims. First, to provide descriptive data on the content of UK youth's possible selves and, furthermore, to explore the impact of the COVID-19 pandemic on hopes, fears and expectations for the future. Second, the study aimed to describe the types of activities youth were engaged in during the COVID-19 pandemic. Finally, the study explored relationships between possible selves, structured activity and wellbeing.

The sample

Participants reported predominantly low wellbeing despite being a non-clinical sample mostly engaged in fulltime education or employment. Wellbeing cut-offs indicated that three quarters of participants (76.67%) met low wellbeing criteria (WMS, 2021). Studies suggest that wellbeing is 'U' shaped, where younger and older people typically report highest levels of wellbeing (Blanchflower & Oswald, 2008). However, given the emerging evidence on the disproportionate impact of COVID-19 on youth, the findings presented are unsurprising yet bleak (Smith et al., 2020). Indeed, reviews on the psychological impact of COVID-19 on youth mental health and wellbeing have highlighted negative psychological consequences (Nearchou et al., 2020).

The sample varied across IMD deciles. Robust bootstrapped confidence intervals supported the significant negative associations between IMD deciles with wellbeing and structured activity. Interestingly, this meant that lower IMD scores (i.e. greater deprivation) were associated with higher wellbeing, although the strength of association was small. This contradicts literature prior to COVID-19, which indicates lower socioeconomic status (SES) as a risk factor for poorer psychosocial outcomes across the

lifespan (Devenish et al., 2017; Pinquart & Sörensen, 2000). However, research emerging following the onset of the COVID-19 pandemic is mixed. The disproportionate impact of COVID-19 on psychosocial outcomes for individuals from poorer socioeconomic backgrounds is emerging (Smith et al., 2020; Ravens-Sieberer et al., 2021). However, some studies have identified reduced wellbeing in individuals with higher SES and educational status (Daly et al., 2020; Talev, 2020; Wanberg et al., 2020). Wanberg et al. (2020) found individuals with greater SES experienced greater deterioration in depressive symptoms and reduced life satisfaction during the COVID-19 pandemic. It was suggested effects may be temporary however this is a surprising finding that warrants further research. It is argued that individuals with higher SES may have greater expectations of consistent accessibility to resources however the pandemic may have created a sense of crisis, whereby resources are threatened and wellbeing is impacted (Diener & Biswas-Diener, 2002; Tversky et al., 1991; Wanberg et al., 2020).

Negative experiences of COVID-19

The present study explored participant experiences of predefined negative COVID-19 outcomes, such as bereavements and income loss. Wellbeing did not significantly differ between participants who reported at least one experience compared to those who had not. It appears that irrespective of negative COVID-19 experiences, wellbeing of the sample was still low.

The possible selves of youth during COVID-19

The majority of possible selves content pertained to personal development, in particular employment or education. Almost all (99.17%) participants reported at least one possible self related to education and employment, with 88.33% generating at least one

hoped-for self in this domain. This indicates a sample motivated towards academic and career attainment. This is unsurprising given that education was the main activity reported. The wider literature corroborates this finding; adolescents most commonly report possible selves relating to personal development, such as future careers and academia (Leondari & Gonida, 2008). Emotional and physical wellbeing were the most frequently reported feared selves in the present study, similarly identified previously with adolescents (Leondari & Gonida, 2008).

The construct of expected possible selves are defined as more realistic perceptions of the future self, whereas hoped-for selves could be deemed as aspirations. When exploring how well possible selves described participants currently, expected and feared selves subjectively described the current self significantly more than hoped-for selves. This indicated greater discrepancy between the current and hoped self, where feared and expected selves better represented the current self. This corresponds with participant ratings on the subjective impact of COVID-19 on possible selves. Whereby most indicated feeling less hopeful, having lower expectations and feeling more fearful. Analysis suggested that wellbeing was significantly lower for participants feeling less hopeful to those who felt the same or more hopeful. A similar finding was observed for those reporting lower expectations for their future. Although most participants reported feeling more fearful, wellbeing did not significantly differ to those feeling the same or less fearful. This last finding should be interpreted with caution, due to unequal sample sizes although variance was of equal size between groups.

Optimism for achieving hoped-for selves, specificity and balance of possible selves were predicted to be associated with higher levels of wellbeing. Contrary to predictions, no relationship was found between wellbeing and specificity or balance of possible selves. However, higher levels of optimism were significantly associated with higher levels of

wellbeing. Optimism's relationship to wellbeing is well documented in the literature. Subjective wellbeing has been found to be significantly predicted by optimism (Kardas et al., 2019). Furthermore, Lyubormirsky and Layous (2013) proposed that engagement in the BPS intervention (King, 2001) may lead to increased wellbeing with the enhancement of positive cognitions, emotions and goal pursuit mediating this change. Due to the correlational nature of the present study, however, causality cannot be determined and it is possible participants who had greater wellbeing felt more optimistic. A meta-analysis investigating the BPS intervention indicated only optimism for positive future expectancies (e.g., hoped-for selves), as opposed to general optimism, was significantly associated with positive affect (Heekerens & Eid, 2021). Given the association between optimism for hoped-for selves and wellbeing in the present study, the best possible selves intervention may provide a useful intervention for post COVID-19 recovery, to reconnect with a hoped-self and redefine behavioural strategies to achieve this within the context of a global pandemic.

Activity and wellbeing

Increased time spent in structured activity was significantly associated with higher levels of wellbeing, supporting the second hypothesis. The sample were predominantly engaged in education as their primary activity, with studying accounting for 3.4 hours on average through the day. In total, structured activity accounted for seven hours on average throughout the day. This approximates to 35 hours per week, which is above the cut-off of 30 hours indicative of social disability (Hodgekins et al., 2015). Although wellbeing was predominantly low, engaging in structured activity appears important, particularly in the context of a global pandemic. The causal nature of the relationship cannot be determined,

however, and it could be that youth with higher levels of wellbeing felt better able to engage in structured activity.

Structured activity in the literature typically includes leisure activities (Hodgekins et al., 2015). Moreover, engagement in leisure activities is considered a key ingredient within wellbeing (Newman et al., 2014). Although increased time spent in structured activity was associated with higher wellbeing in the present study, the sample was notably low in wellbeing. However, due to the COVID-19 pandemic, no leisure activities were accessed out of the home. Hobbies were not included in the calculation of structured activity. Although activities, such as gaming, may provide pleasure, there were also long periods of unspecified mobile phone and computer use captured. Similarly to the consumption of mass media (e.g. television), both mobile phone and internet use are considered unstructured with no predetermined start and end times (White et al, 2011). Mobile phone use has become increasingly popular, particularly to younger populations, but has been associated with negative mental health outcomes (Thomée, 2018; Volkmer & Lermer, 2019).

The relationship between optimism, structured activity and wellbeing

Whilst it is well established that increased levels of activity are implicated in increased wellbeing, the role of possible selves in this process is less clear. Exploratory analyses were conducted to investigate this further. Based on possible selves theory, it was hypothesised that possible selves might moderate the relationship between structured activity and wellbeing. Whereby, more specific, balanced and optimistic possible selves provide a clearer roadmap for more focused and targeted activities linked with personal meaning, long-term goals and values, thus strengthening the relationship between activity and wellbeing. Alternatively, it was hypothesised that structured activity might mediate the

relationship between possible selves and wellbeing, with behaviour (i.e., structured activity) being the process by which possible selves were enacted. However, neither model was supported. Thus, the mechanism by which possible selves and structured activity affect wellbeing (and vice versa) remain unknown. It is possible that there are distinct pathways between possible selves and wellbeing and structured activity and wellbeing as outlined above. However, further research is necessary.

Possible selves are argued to contribute toward wellbeing via the extent to which an individual perceives they can achieve or avoid them (Markus & Nurius, 1986). Indeed, optimism for future selves has been associated with wellbeing, motivation and success (Bandura, 1997; Karademas, 2006; Taylor & Brown, 1988). However, the importance of situational context in the relationship between possible selves, goal-directed behaviour and wellbeing is suggested to be important (Oyserman et al., 2006). The COVID-19 pandemic represents an unprecedented shift in context, which has impacted on how young people feel towards attaining future selves. This may create incongruence and further disparity between the current self and perceptions of what might be achievable in future. Indeed, immediate context can impact perceived or real temporal distances amongst future and current selves (Ersner-Hershfield et al., 2009; Oyserman et al., 2015; Wakslak et al., 2008). Wrosch (2011) highlights the detrimental impact seemingly unattainable goals can have on emotional distress and wellbeing.

Possible selves have been defined as self-regulatory, through representing a self-defined goal with aligned behavioural strategies. However, a distinction between self-regulatory and self-enhancing possible selves have been identified (Hoyle & Sherill, 2006; Oyserman et al., 2004). Self-regulatory possible selves are suggested to govern and motivate behaviour whereas self-enhancing serve to foster positivity towards the self. This suggests that self-enhancing possible selves may function to enhance optimism, hope and

self-esteem rather than directly govern behaviour. It is possible that the possible selves reported within the context of a global pandemic may function to self-enhance rather than drive behaviour (Teraji, 2009). Future thinking around attaining goals may have functioned to regulate affect, regardless of whether this occurs alongside goal-directed behaviour (Taylor et al., 1998).

Strengths and limitations

Due to rapidly changing lockdown restrictions, a broad measure of time use was required to capture activities. Valuable and detailed accounts within the context of the COVID-19 pandemic were collected. Structured activity was calculated based on a 24-hour period, however this is unlikely to be wholly representative of a longer time frame, such as a week or month. However, to ensure the survey was not overly burdensome additional days were not captured. Similarly, it was not feasible within the time constraints of the study to request follow up responses.

There were some limitations to the present study. Primarily, the analysis of cross-sectional data limits conclusions regarding cause and effect. Conducting mediation analyses on cross-sectional data can be problematic due to the inference that causal processes unravel throughout time (Maxwell & Cole, 2007). Nonetheless, mediation can be a useful tool in exploratory testing of theoretical models. Providing theoretical grounding exists, Hayes (2017) suggested cross-sectional data can be utilised. The present study was anchored within possible self theoretical framework. Future research would benefit from collection and analysis of longitudinal data, to explore how variables unfold over time.

The open-ended possible selves questionnaire allowed identification of future selves within the context of the COVID-19 pandemic. The possible selves measure does

not provide instructions on detail regarding possible selves, which may have impacted on the quality of responses, particularly for assessment of possible self specificity. Nonetheless, some participants provided lengthier descriptions. Inclusion of temporal anchors may promote specificity, such as identifying a possible self in the next year, for example (Oyserman & James, 2011). Development of standardised instructions around reporting of possible selves may be a useful addition for future research.

Although the coding manual for possible selves had undergone meticulous development (Lee, 2020), it is possible it does not accurately measure the underlying constructs of balance and specificity. Possible selves were coded into the dichotomy of 'balanced' or 'not balanced' according to whether a minimum of 50% of hoped-for and feared selves were balanced. This method may minimise the importance of a possible self that is balanced due to others not achieving balance. Future research may benefit from using the percentage score to indicate balance along a continuum. Future research on validity and reliability of the coding manual is recommended.

Participants were recruited from the UK and were not particularly diverse, with the sample predominantly White British and identifying as female. Although attempts were made to recruit from other populations aside from student populations, most were in education. Therefore, the generalisability of findings beyond UK student populations is limited. Future research with more diverse populations and NEET youth would be beneficial.

Clinical implications

The present study has highlighted the consequences of the COVID-19 pandemic on perceptions of the future self and low levels of wellbeing. Enhancing wellbeing may be pivotal in buffering against future mental health difficulties. Current findings indicate that

engagement in structured activity and optimism towards realising hoped-for selves are related to increased wellbeing. Supporting young people to redefine possible selves in the COVID-19 context may be adaptive, particularly in the pursuit of meaningful goals (Wrosch et al., 2003). Furthermore, supporting young people to generate hoped-for selves may serve to enhance optimism (Heekerens & Eid, 2021). This is particularly pertinent in the context of COVID-19, whereby hoped-for selves may feel increasingly distant. Additionally, supporting young people to engage in meaningful structured activity aligned with hoped-for selves may be a fruitful avenue toward enhancing wellbeing.

Future research

The present study did not match activity to possible selves. Given the predominately student sample and possible self content domains of personal development, it could be assumed that elements of structured activity were aligned with possible selves. Future research would benefit from posing the question 'are you doing anything to be this way?', previously used to identify goal-directed behaviour (Oyserman & Markus, 1990). Similarly, ecological momentary assessments have been successfully employed, alerting participants to indicate if current activities are aligned with future selves throughout the day (Hoppmann et al., 2007). Understanding how behaviour aligns with possible selves, particularly during the pandemic, will be a useful step in determining the relationship between possible selves, behaviour and wellbeing.

Conclusion

The present study offered unique insights into the future selves, activity and wellbeing of youth during the COVID- 19 pandemic, through the lens of possible selves theory. The implications of this study demonstrate how the COVID-19 pandemic has

detrimentally impacted young people's future visions for themselves. Wellbeing was mostly low although young people were engaging in structured activity, namely study. Significant relationships were found between structured activity, optimism toward achieving hoped-for selves and wellbeing. These have important implications for COVID-19 recovery, whereby encouraging young people to engage in structured activity aligned with hoped-for selves may help bolster wellbeing. Interventions that may manipulate optimism for future selves, such as the BPS (King, 2001), may offer a promising way to redefine selves in the context of a global pandemic and elucidate strategies for goal-directed behaviour.

Declarations of interest:

None

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CHAPTER FIVE

Additional Methodology

Additional Methodology

Part One: Empirical Paper

The Mancroft Advice Project (MAP)

Many coastal communities in East Anglia, for example, experience higher than average levels of deprivation (Noble et al., 2019). They also face a number of socio-economic challenges such as, physical isolation, poor-quality housing, an over-reliance on tourism and seasonal employment (Atterton, 2006). The study recruited young people from the Mancroft Advice Project (MAP), a Norfolk based charity that provides information, advice and counselling for young people aged between 11 and 25 years (MAP, nd). MAP therefore acted as a gatekeeper to young people from lower socio-economic areas who may be experiencing higher levels of deprivation.

Power calculations

A priori power analysis was calculated for the empirical paper. Based on relevant literature, a medium effect size of r = 0.3 was used to calculate power using G*Power (Faul et al., 2009). For the correlational analysis, to achieve a power level of 0.9 with a medium effect size of r = 0.3, 112 participants were required. For the point biserial correlation, to achieve a medium effect size of r_{pb} = 0.3 and 0.9 power, a total sample of 109 participants were required. For bootstrapping to test mediation and moderation models, with a medium effect size of f^2 = 0.15, two predictor variables (possible selves and structured activity) and controlling for age and IMD, a total of 108 participants would provide power of 0.9 (Faul et al, 2009). Therefore, a minimum sample of 112 participants was deemed appropriate to achieve necessary power for all analyses.

Procedure

The research was explained in detail to the educational establishments and MAP, with opportunities to ask questions and have these answered. Gate-keeper approval was established from all four education establishments and MAP prior to ethical approval and commencement of the study.

Ethical Issues

Consent

After provision of the information sheet (appendix D), consent from each participant was documented via the online platform, through ticking to provide their consent before being able to progress onto the study measures (appendix E). Participants were informed of their right to withdraw up until data was analysed and provided a unique research identification number. This was made explicit on the consent form and participants were reminded again at the end of the study, with an option to withdraw their data or submit. Each page of the survey reminded participants that they could also close the webpage to withdraw and their data would not be stored.

Confidentiality

The potentially identifiable information participants were asked to provide was an email address so they can be contacted again for future research purposes and the first part of their postcode to identify socioeconomic status. Confidentiality was assured through provision of an individual, anonymous research ID number available on the study measures and debrief sheet. The email address and outward postcode were removed from the survey and stored on separate databases on secure UEA servers along with the

matching research ID number. In accordance with The General Data Protection Regulations (GDPR) as part of the 2018 Data Protection Act (DPA), data will be stored securely for 10 years before being destroyed. The study, containing the consent forms and study measures, was provided through Jisc Online Surveys, which is in accordance with GDPR and 2018 DPA regulations.

Participants were automatically entered into the prize draw, providing they had completed the survey and not withdrawn their data. The survey was set up to ensure answers must be provided before more onto the next page. A winner was selected at random and contacted once data collection was completed.

Distress

The study was not anticipated to cause significant distress due to the focus on positive outcomes. However, the possibility of difficult feelings arising from completion of the measures was considered. A potential source of distress could have been generated from identifying possible selves, through evaluation of the current self against future selves, and reporting wellbeing. Participants were informed of any potential risks on the information sheet before consenting to take part. On each page of the survey, participants were provided helplines and the option to close the webpage to withdraw from the study immediately. Contact details of the research team were provided on the information sheet and debrief sheet, allowing participants to make contact at any point before, during or after the study, along with helpline contact numbers.

Coercion

Participants were not deceived or coerced into taking part in the research study. Due to the survey being time consuming (approximately 40 minutes), participants had a

0.83% chance of winning a £25 voucher. This prize draw served as an incentive to participate and to thank participants for their time.

CHAPTER SIX

Additional Results

Additional Results

Part One: Systematic Review

Quality Ratings

Individual item POMRF quality ratings (Öst, 2008) are presented in Table 6.1.

Table 6.1

Individual item ratings for each included study on the POMRF quality rating tool (Öst, 2008)

	POMRF item number																					
Study	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**Total**
Krafft et al. (2020)	2	-	1	-	1	2	0	0	2	2	0	0	2	0	0	1	0	0	2	2	1	1	21
Lee et al. (2020)	1	-	1	-	2	2	0	0	2	0	0	0	1	1	2	1	1	2	2	2	1	0	21
Levin et al. (2020)	2	-	2	-	1	2	0	0	2	2	0	0	2	0	0	1	0	0	1	2	0	2	19
Muto et al. (2011)	1	-	2	-	1	2	0	0	2	0	2	1	1	0	0	1	0	0	2	2	2	0	19
Räsänen et al. (2016)	2	-	1	-	1	1	0	0	2	0	0	2	0	1	0	1	1	2	2	2	0	0	18
Lappalainen et al. (2021)	1	-	2	-	2	2	0	0	2	0	0	0	1	1	0	1	1	0	1	2	0	0	16
Levin et al. (2019)	2	-	2	-	1	2	0	0	2	0	1	0	1	0	0	2	0	0	1	2	0	0	16
Levin et al. (2016)	2	-	2	-	1	2	0	0	2	2	0	1	0	0	0	1	0	0	1	2	0	0	16
Kocovski et al. (2019)	1	-	2	-	2	1	0	0	0	0	2	1	2	0	0	1	0	0	1	2	0	0	15
Levin et al. (2017)	2	-	1	-	1	2	0	0	2	0	0	0	0	0	0	1	0	0	1	2	0	0	12
Krafft et al. (2019)	2	-	1	-	1	2	0	0	2	0	0	0	0	0	0	0	0	0	2	2	0	0	12

	POMRF item number																					
Study	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**Total**
Levin et al. (2015)	2	-	1	-	1	2	0	0	0	0	0	0	0	2	2	1	0	0	1	2	0	0	14
Haeger et al. (2020)	1	-	1	-	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	12
Gómez et al. (2014)	1	-	0	-	2	1	0	0	0	0	0	2	2	0	1	0	0	0	0	2	0	0	11
Twohig et al. (2006)	2	-	0	-	2	2	0	0	0	0	0	1	2	0	1	2	2	0	1	2	0	0	17
Juncos & Markham (2016)	0	-	0	-	2	2	0	0	0	0	0	1	2	0	2	1	1	0	0	2	2	0	14
Masuda et al. (2016)	2	-	0	-	2	2	0	0	0	0	0	2	2	0	2	0	0	0	0	2	0	0	14
Chapman & Evans (2020)	2	-	0	-	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	2	0	0	8

Note.

Items two and four were not applicable and removed when quality rating studies.

Part Two: Empirical paper

Data preparation

A proportion (20%) of possible selves were coded independently by two raters (JS and JH) for content, specificity and balance. Where there were disagreements, these were discussed, and consensus established through returning to the guidance provided in the coding manual (appendix K, M-N). Similarly, 20% of time use data were category coded, using the manual provided by Eurostat (2018).

Data was produced into histograms and P-Plots to assess for normality of distributions. Skewness and kurtosis statistics were explored to assess normality of data (Field, 2013). Kurtosis was identified in the SWEMWBS data (4.607, SE = 0.44). The Kolmogorov-Smirnov test of normality was significant, $D\ (120) = 0.11$, $p < 0.001$, indicating data violated assumptions of normality. However, the sample was large, potentially meeting central limit theorem thus reducing concerns regarding normality (Field, 2013). The SWEMWBS approximates to that of a normal distribution (Warwick Medical School, 2021).

Boxplots enabled examination of data for any obvious errors or mistakes. Outliers in the data were identified through converting to z-scores and applying empirical rule of ≥ 3 or ≤ -3. This identified two participants SWEMWBS data representing the extreme upper and lower score limits. It was deemed inappropriate to remove outliers and therefore bootstrapping procedures with 1000 resamples were applied (Field, 2013).

CHAPTER SEVEN

Discussion and Critical Evaluation

Discussion and Critical Evaluation

Summary of findings

This thesis portfolio broadly sought to understand factors related to youth mental health and wellbeing. The systematic review explored the efficacy of ACT interventions with youth. Utilising a narrative synthesis approach, results indicated improvements to psychological symptoms, distress, wellbeing and QoL from pre to post intervention. Findings indicated, however, that ACT might not be superior to other active treatments, such as CBT, MBSR and MHE. There were also mixed findings regarding ACT's effectiveness beyond waitlist groups, which may in part be due to the non-clinical populations investigated. Overall psychological flexibility tended to improve by post intervention however only one RCT demonstrated significant improvements beyond waitlist or active controls. No definitive conclusions can be made due to methodological restraints of the studies. However, findings indicate ACT's potential usefulness and appropriateness within a youth context across a variety of presentations. Recommendations were provided for future research in youth samples.

There are a number of key findings emerging from the empirical paper with implications for practice. Notably, a high proportion of the predominantly student sample reported low levels of wellbeing. Literature emerging since the onset of the COVID-19 pandemic corroborates the detrimental impact on young people's wellbeing (Smith et al., 2020). Youth who reported feeling less hopeful, and those who had lower expectations, since the onset of the COVID-19 pandemic reported significantly lower wellbeing. Hoped-for selves generated by the sample were mostly categorised within the domain of personal development. These typically envisaged hopes toward future academic or employment attainment. Global research across 62 countries into the impact of COVID-19 indicated

student concerns regarding future educational attainment and professional careers (Aristovnik et al., 2020). Therefore, the context of COVID-19 is likely to have had profound impacts towards future selves. Youth is a developmental stage with numerous emotional, cognitive and social changes (Power et al., 2020), with prolonged instability and transition (Arnett, 2015). Indeed, the importance of social identity and relatedness become more pronounced as the brain develops in youth (Somerville, 2013), with levels of loneliness high amongst young people (Matthews et al., 2019). The policies used in the management of the COVID-19 pandemic, such as 'lockdowns', social distancing and remote learning, alongside job and financial insecurity or loss, may particularly impact on youth and further exacerbate instability. Addressing youth mental health and wellbeing should therefore be considered a priority both during the pandemic and following.

Increased optimism for attaining hoped-for selves was significantly associated with higher levels of wellbeing and increased time spent in structured activity. Increased time spent in activity was also associated with higher levels of wellbeing. However, understanding the nature of these relationships and their underpinning mechanisms is still unclear. There are a number of possible explanations for the non-significant findings when testing the possible selves framework through path analyses. It has been suggested that situational context is an important consideration in the self-regulatory process of possible selves. Oyserman et al. (2015) found increased motivation was dependent on the fit between the current context and accessible possible selves. Findings should therefore be interpreted within the context of the COVID-19 pandemic. The ever-changing contextual landscape and uncertainty around the impact of COVID-19, along with self-reported reduction in hopes for the future, may signify increased discrepancy among the current context and hoped-for self. Thereby, possible selves may have less motivational influence on behaviour.

Second, there may have been other confounding variables influencing the relationship, such as social isolation and loneliness. It is also likely that other variables not included in the study may have key roles in the relationships amongst possible selves, structured activity and wellbeing. For example, efficacy expectancies, such as hope and self-efficacy (Bandura, 1977; Snyder et al., 1989) are suggested to be greater predictors of behaviour than the outcome expectancies of possible selves. In a study investigating possible selves impact on physical activity, self-efficacy appeared to moderate when possible selves influence behaviours (Strachan et al., 2017). Indeed, a recently proposed integrative model of self-regulation, The MAPS model, emphasizes the role of agency, or self-efficacy, as pivotal in possible selves' motivational power (Frazier et al., 2021). It is therefore recommended that future research incorporates efficacy expectancies when considering possible selves as motivators toward goal-directed activity and wellbeing.

Neither specificity nor balance were significantly related to any other variables in the study. Specificity refers to how specific, rich and well defined a possible self is. It is suggested that possible selves containing specific behavioural strategies in attaining goals fuel motivation to engage in them (Markus & Nurius, 1986; Oyserman et al., 2004; Oyserman et al., 2006; Ruvolo & Markus, 1992; Stevenson & Clegg, 2011). Balance is also considered a characteristic contributing toward the motivational power of possible selves (Oyserman & Markus, 1990). Whereby hoped-for and feared selves that are related to the same topic have an additive effect on motivating behaviour toward achieving hoped-for selves and away from feared selves (Leondari & Gonida, 2008). Findings may have been impacted by the study measures or the coding process. For example, the diary measure used assessed time spent in a range of activities which may or may not have been linked to the specific content of one's possible selves. Moreover, due to the pandemic, it may not have been possible for people to engage in activities linked to their possible

selves, hence a lack of association between structured activity and specificity or balance. Alternatively, it could be that the pandemic has influenced individuals' ability to clearly visualise their future selves, thus reducing specificity ratings. As discussed in the empirical paper, future research should investigate the reliability and validity of the coding manual for assessing the constructs of specificity and balance.

Analysis also identified a positive correlation between time spent in structured activity and age. A possible explanation regarding this finding is that older participants may be more likely to engage in full time employment or childcare and live independently. In addition, due to COVID-19 restrictions and remote learning, students may have returned to the familial home. Research suggests parents or caregivers have a higher participation rate in housework compared to their children (Gimenez-Nadal et al., 2018). Therefore, participants may be engaging in less housework and chores while residing in the familial home.

In addition to possible selves, other theories not explored within this thesis may also be useful for future research to consider. For example, Self-determination Theory (SDT; Deci & Ryan, 2000) may also offer a fruitful explanation toward understanding the low wellbeing observed within the sample. It is posited that motivation occurs if a task provides basic psychological needs, such as a sense of autonomy, mastery and valued social interactions, which have implications for wellbeing (Deci & Ryan, 2000). It has been argued that wellbeing deteriorates during situational contexts that hinder satisfaction of psychological needs (Deci & Ryan, 2008). Indeed, the COVID-19 pandemic has hampered many opportunities to engage in activities. Future research may benefit from investigating this further in light of the impact of the COVID-19 pandemic.

Considering the portfolio as a whole, both ACT and possible selves share similarities of envisioning a valued self in the future in the pursuit of encouraging goal

directed behaviour and subsequent wellbeing. The vast majority of studies identified in the systematic review applied ACT with student populations, utilising remote self-help interventions such as mobile applications, web-based support and self-help books. Although further research with increased methodological rigour is needed, ACT may be a useful population level intervention for bolstering youth, particularly student, wellbeing during COVID-19 recovery.

Critical Evaluation – Strengths and Limitations

Systematic Review

The systematic review focused on ACT interventions for youth. The population studied was intentionally broad in order to synthesise the available literature for youth. As outlined in the introduction, there is a clear rationale for focusing on youth as a distinct developmental period. Although there have been rapid developments in the field of youth mental health (Power et al., 2020), the systematic review highlighted the disparity of individual ACT interventions within this age group. Due to this disparity, the mean age of participants was used as part of the inclusion criteria. The true number of youth aged participants captured within the review cannot be confirmed due to inaccessibility of study data. This therefore limits the conclusions of findings for a purely youth population although is likely more representative of university student population. Over the past five years, students aged 18 to 24 years have accounted for 67% to 69% of the whole UK higher education student population (Higher Education Statistics Agency [HESA], 2021). Therefore, youth account for the majority of the student population, with older age groups accounting for approximately one third.

In keeping with a broad review, there were no inclusion or exclusion criteria regarding the presentation being studied. This was intentional to capture the varied

applications of ACT within a youth population. The dearth of research specifically within clinical youth populations was exposed, with the review identifying individual case studies on certain presentations (e.g., eating difficulties). Given that ACT does not aim to reduce psychological symptoms, the outcomes chosen were deliberately broad to capture changes along the distinct mental health continua (Keyes, 2002). It was a surprising finding that all but one study included measures of psychological symptoms and 61% included measures on quality of life and wellbeing. The inclusion of psychological flexibility felt critical given the ongoing debate regarding understanding the underlying mechanisms of therapeutic change (Hofmann & Hayes, 2019).

A strength of the systematic review was the careful consideration on defining what constitutes an ACT intervention. A balance was attempted between not being too stringent on the criteria (e.g., employing all six elements of the ACT hexaflex) whilst maintaining core aspects of ACT that define it from other interventions, such as mindfulness-based cognitive therapy (MBCT). The value of this definition was further accentuated by the unequivocal findings of Levin et al. (2016). Whereby, while the '*centred'* dyadic response style was available in their intervention, the uptake was poor, which the authors concluded may have impacted on its effectiveness. This would be supported by Hayes et al., (2012) who posit that balance between all three response styles strengthens psychological flexibility.

The review focused purely on individual ACT interventions, with exclusion criteria regarding group or involvement of significant others. ACT is considered a flexible model in its approach, where therapists "dance around the hexaflex" (Harris, 2009, p. 30). Group settings by their very nature present greater challenges in flexibly addressing individual needs. While there are unique benefits to group therapy, such as cost-effectiveness (Nowicka et al., 2011), this was beyond the scope of the current review and the focus was

on the effectiveness of individual therapy, where ACT can be implemented with increased fluidity. There are other systematic reviews exploring the efficacy of ACT with groups (e.g., Coto-Lesmes et al., 2020).

The search terms were deemed rigorous to identify relevant studies. A process of iterative refinement occurred early on during the scoping stages. In order to be maintain a balance between being broad enough without generating overwhelming response, terms relating to the 'engaged' dyadic response style were not used. The justification for this occurred in the inclusion criteria for an ACT intervention; whereby at least one element of each dyadic response style was required. Therefore, limiting the criteria to focus on defusion and mindfulness hexaflex elements was deemed appropriate enough to identify ACT interventions meeting inclusion criteria.

The protocol for the systematic review was previously registered on Prospero. Through following a protocol, this promotes transparency of the review process and allows for future duplication of research. Changes were made to the protocol due to the iterative process of refining criteria.

A strength of the systematic review was the utilisation of a second reviewer during the process of selection and quality rating. However, there was moderate agreement regarding full-text articles eligible for inclusion. Upon discussion, the differences were primarily regarding the intervention. Although studies were required to be explicit in their use of hexaflex elements, the primary researcher had greater understanding of ACT which aided in identifying the structure of the intervention. For the quality rating, agreement was high and a clear strength of the review.

The PORMF quality rating tool (Öst, 2008) has used in other ACT and CBT systematic reviews with diverse research designs. The rationale for choosing the POMRF over other available quality rating tools was due to an aim of complimenting existing

systematic reviews. Current reviews investigated ACT interventions with children and adolescents to a maximum mean age of 18 years (Swain et al., 2015; Harris & Samuel, 2020). The present systematic review stipulated inclusion criteria of a mean age between 15 and 24 years, with 83.33% of the literature identified reporting participant mean ages above 18. Thereby adding a unique contribution to the existing evidence base.

Inclusion of multiple research designs and likely high heterogeneity between studies prevented a meta-analysis being conducted. A strength of the review is through highlighting the dearth of literature within a youth population and generally low methodological quality within the identified ACT literature. The present review illuminates the infancy of the literature exploring ACT interventions with a youth population, particularly with clinical presentations. With the comparison of ACT to other evidence-based treatments, such as CBT, consideration of treatment aims should be taken into account. Whereas CBT may aim to reduce psychological symptoms, ACT aims to improve psychological flexibility to enable a more meaningful life (Harris, 2009). Therefore, alongside measures of psychological flexibility, the utilisation of wellbeing or QoL measures is recommended, with analysis including calculation of reliable change. Given the development of youth mental health services internationally, developing the evidence base for ACT within this population is critical for practice.

Empirical paper

The empirical study was the first, to the best of the authors knowledge, to explore the possible selves, wellbeing and structured activity of UK youth during the COVID-19 pandemic, thus providing a unique contribution to the evidence base.

The COVID-19 pandemic occurred during the process of gaining FMH ethical approval. Due to the closure of educational establishments and other non-essential

businesses, this resulted in significant changes to the original proposed study. This prompted several amendments which received FMH ethical approval. Perhaps the most challenging aspect during COVID-19 was recruitment; the study was amended to be entirely online. However, there was limited success in recruiting youth via social media. Similarly, small numbers were recruited through a Norfolk youth charity. When exploring how best to reach out to young people, the charity reported struggling to access and engage their usual audience. Recruitment was most successful through the university. This may introduce participant and sampling bias and limits the external validity and generalisation of findings to the wider population. However, it does help provide an understanding of how these variables are related in a primarily student population. It is not uncommon in psychological research to use student samples. One study exploring sample characteristics in the Journal of Applied Psychology found approximately 40% of published papers used samples taken from student populations (Shen et al., 2011). Due to the time limited nature of conducting thesis empirical research and the restrictions imposed preventing face to face contact, student populations provided a convenient and easier to access sample.

Participants were not asked where they had been recruited from. Although proximity between emails sent by educational establishments with the study link to response rates indicated these were recruited through that route, this cannot be ascertained. In future, inclusion of a question for participants to indicate where they had heard about the study may be of benefit. The representativeness of recruiting through social media has been questioned due to participants being typically female (Thornton et al., 2016), well-educated and experiencing greater psychological distress (Bennetts et al., 2019). In addition, survey methods can produce a non-response bias where participant characteristics may differ between those who do and do not participate (Groves, 2006; Groves & Peytcheva., 2008).

The use of valid and reliable measures were a strength, particularly enabling comparison of SWEMWBS data to national norms. However, the coding of specificity and balance of possible selves may have impacted upon results. Specificity and balance of possible selves were not significantly related to any other variables in the study. The coding manual underwent meticulous development (Lee, 2020) although future research would benefit from investigating reliability and validity.

The sample size for the present study was a strength and had sufficient power to detect effects if present. When analysing data, robust methods of bootstrapping were applied to account for non-normal distributions. Due to the sample size, central limit theorem likely applied (Field, 2013).

Due to the rapidly evolving climate of the COVID-19 pandemic, amendments were made to the original protocol for the measurement of activity data. Originally, structured activity was intended to be assessed using the Time Use Survey (TUS; Hodgekins et al., 2015). The TUS is shortened version of the time use diary (Short, 2006). It has been validated for use with clinical and non-clinical populations and routinely used with youth populations (Hodgekins et al., 2015). However, due the closure of non-essential businesses, several areas addressed within the Time Use Survey were redundant (e.g., going to the cinema, cafes, restaurant, swimming pool, etc). The literature supports the use of a time use diary as another preferential method in exploring time use data with young people (Hunt & McKay, 2015). There are a variety of methods available to capture time use, such as structured surveys using stylised estimates (e.g. the TUS), experience sampling methods (ESM), direct or time-stamped observations and time-use diaries (Ver Ploeg et al., 2000). The accuracy and detail of data provided through time use diaries indicated their robustness and suitability for the empirical research (Hunt & McKay, 2015; Van Der Ploeg et al., 2010). Time use diaries can be burdensome, however, and can

contribute towards survey fatigue, which in turn deteriorates the quality of data (Backor et al., 2007). Maintaining balance in gathering good quality data that was not overly burdensome justified limiting the diary to one 24-hour day. Data collected during one single point in time was most feasible given thesis time restraints.

Retrospective 'yesterday' or prospective 'tomorrow' diaries are considered the most appropriate and accurate (Hunt & McKay, 2015). However, 23.17% of the sample completed the survey on either a Sunday or Monday. This required retrospective recall of the prior Friday, which casts doubts over the accuracy of recall and may impact the reliability and validity of results. Nonetheless, the majority of participants provided 'yesterday' diaries in the study.

The calculation of structured activity was based upon the conceptualisation provided in the TUS (Hodgekins et al., 2015). The only exception was that leisure activities were not calculated into structured activity. The rationale for this was no participants engaged in any leisure activities, likely due to COVID-19 restrictions. Consideration was given to include hobbies within structured activity. However, a collective decision was made to exclude this due to the large amounts of unstructured mobile phone use in the sample. Research suggests increased engagement in mobile phone use is associated with decreases in wellbeing (Volkmer & Lermer, 2019). Playing video games were also included under hobbies and therefore excluded from structured activity in the empirical paper. Research into the positive and negative impacts of video games are mixed however indicate that time spent in gameplay is a moderating factor (Jones et al., 2014).

The research generated a wealth of data with many potential avenues of exploration. However, the analysis plan was followed to prevent 'fishing' for significance findings. Data gathered through implementing the 24-hour diary may provide valuable

contributions to future research on understanding how youth have spent their time during the COVID-19 pandemic.

Participants provided consent for their data to be used in subsequent analyses and some provided consent to be contacted in future. This could allow for longitudinal data to be collected and therefore address the limitations of conducting mediation analyses using data from a cross-sectional design. Future research utilising the current data set could explore the relationship between wellbeing and sleep, mobile phone use and time spent with others. Data captured would also allow for comparison to other populations, such as clinical, child and adult samples.

Due to the focus on positive outcomes, there was less focus on the consideration of feared selves towards motivating behaviour. Future research may wish to explore the concept of pessimism in relation to engagement in structured activity and wellbeing.

This study offers a unique and timely perspective into the possible selves, structured activity and wellbeing of youth during the COVID-19 pandemic. In particular, it highlights the significant and detrimental impact of the COVID-19 pandemic on young people's perceptions of their future and current wellbeing. The predominately low levels of wellbeing amongst students emphasise the need to screen for wellbeing and consider population level approaches to help support and bolster this. A proactive approach toward promoting wellbeing is warranted, to help buffer against longer term difficulties during the next phases of COVID-19 recovery.

In addition, this study presents a wealth of future research opportunities. Participants provided consent to be followed up, which would provide longitudinal data on whether possible selves variables, structured activity and wellbeing have changed during the ongoing COVID-19 pandemic. This will be important in monitoring the longer-term impacts of an unprecedented pandemic. In addition, a wealth of data on possible selves

and specific structured activities have been gathered, which could be explored in secondary analyses. For example, exploring the relationships amongst location or presence of others with wellbeing, or exploring COVID-19 themes within the qualitative possible selves and time use diary data.

Clinical and Theoretical Implications

The systematic review presented in the thesis portfolio suggests that individually delivered ACT may be a promising intervention for youth. However, definitive conclusions cannot be drawn due to a lack of methodologically rigour. Nonetheless, results are encouraging and support ongoing research into the efficacy of ACT for youth. Several recommendations for future research in this area were made in the systematic review paper.

The empirical paper adds to the emerging literature regarding the negative consequences of the COVID-19 pandemic in youth wellbeing. The study presents a unique contribution towards the evidence base through capturing young people's hopes, expectations and fears for the future alongside how these have been impacted by the pandemic. Youth wellbeing was low which has implications for considering how best to engage and support young people in bolstering their wellbeing. The empirical paper tested possible selves theory, which describes possible selves as directly impacting on motivation and behaviour. However, the COVID-19 pandemic may represent a situational context in which possible selves have less motivational power. This has implications for supporting young people towards redefining hoped-for selves that feel achievable within the context of COVID-19. The process of generating a goal has been linked to increased levels of wellbeing and contributed towards increased optimism for attaining the goal (Gonzales et

al., 2001). The Best Possible Self intervention (BPS; King, 2001) may therefore be an appropriate consideration as an intervention for young people, especially given that youth who reported feeling less hopeful for their futures due to the pandemic had significantly lower wellbeing. The BPS has found that optimism can be manipulated leading to increases in wellbeing (Meevissen et al., 2011; Peters et al., 2010). Given the relationship observed between optimism and wellbeing, this has clinical implications as a viable intervention for youth.

Valuable insights into the daily activity of youth during the COVID-19 pandemic were gained from the empirical research. Even during the difficult circumstances of an international pandemic and national lockdowns, engagement in structured activity, such as employment, education, voluntary work, and sport or exercise, was associated with greater levels of wellbeing. Supporting young people to engage in structured activity is therefore recommended to support wellbeing and buffer against future mental health difficulties identified in those with social disability (Hodgekins et al., 2015). Models emphasising goal-directed behaviour support this notion. For example, behavioural activation (BA) and Acceptance and Commitment Therapy promote identification of goals aligned with values and engagement of behaviour towards them. BA's applicability beyond being an intervention for depression is gathering momentum, with increasing support that it may cultivate wellbeing, protect against depression and construct a more meaningful life in non-clinical populations (Hale & Spates, 2015; Mazzucchelli et al., 2009; Mazzucchelli et al., 2010). It has therefore been suggested that BA could also be an attractive intervention for promoting wellbeing in both clinical and non-clinical populations through increasing meaningful activity (Mazzucchelli et al., 2010). Interventions aimed at promoting engagement in valued and rewarding activities are related to improved subjective wellbeing (Read et al., 2016). These findings, along with those from the empirical study,

suggest encouragement of young people to engage in structured activity in supporting wellbeing.

CBT, which incorporates both cognitive and behavioural components (Greenberger & Padesky, 1995), is suggested as a potential intervention to support youth during and post the COVID-19 pandemic. As addressed within this thesis, ACT, a third wave CBT, may offer a transdiagnostic approach towards supporting young people to connect with their values and engage in values-based behaviour.

Overall Conclusions

The present thesis offers insight into factors that may contribute toward wellbeing in youth. The context of the COVID-19 pandemic has subjectively impacted upon youth's hopes, expectations and fears for themselves in the future. Positive associations found between structured activity, optimism for future selves and wellbeing have implications for wellbeing interventions. An intervention that may hold promise is ACT, which emphasises values-based direction, acceptance of difficult feelings and defusion from the content of unhelpful thoughts. However, the systematic review highlighted that further methodologically rigorous research is still required within this area. With wellbeing reported to be predominantly low, supporting youth in bolstering wellbeing to help buffer against longer-term mental health difficulties will be critical during recovery from the COVID-19 pandemic.

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Appendix A: Journal of Contextual Behavioural Science guidelines for authors

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The *Journal of Contextual Behavioral Science* is the official journal of the Association for Contextual Behavioral Science (ACBS).

Contextual Behavioral Science is a **systematic and pragmatic approach** to the understanding of behavior, the solution of human problems, and the promotion of human growth and development. Contextual Behavioral Science uses **functional principles and theories** to analyze and modify action embedded in its historical and situational context. The goal is to **predict and influence behavior**, with precision, scope, and depth, across all behavioral domains and all levels of analysis, so as to help create a behavioral science that is more adequate to the challenge of the human condition.

Contextual behavioral science is a strategic approach to the analysis of human behavior that proposes the need for a **multi-level** (e.g. social factors, neurological factors, behavioral factors) and **multi-method** (e.g., time series analyses, cross-sectional, experimental) exploration of **contextual and manipulable** variables relevant to the prediction and influence of human behavior.

The journal considers papers relevant to a contextual behavioral approach including:Empirical studies (without topical restriction - e.g., clinical psychology, psychopathology, education, organizational psychology, etc.)Brief reports on preliminary, but provocative findings Reviews (systematic reviews and meta-analyses are preferred) andConceptual and philosophical papers on contextual behavioral sciencePractical innovations (descriptions of practical innovation applying contextual behavioral science)Commentaries

We are particularly interested in: Papers emphasizing the study of core **behavioral processes** that are relevant to a **broad range of human problems**Papers **bridging different approaches** (e.g., connecting behavioral approaches with cognitive views; or neurocognitive psychology; or evolutionary science)Papers that **challenge** a contextual behavioral science approach from an informed perspective

The journal welcomes papers written by researchers, practitioners, and theoreticians from different intellectual traditions. What is distinctive is not a narrowly defined theory or set of applied methods but whether the methodology, conceptualization, or strategy employed is relevant to a contextual behavioral approach.

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The Journal welcomes suggestions for Special Issues. Proposals for a themed Special Issue should be sent to the Editor-in-Chief, Michael Levin at The *Journal of Contextual Behavioral Science* is the official journal of the Association for Contextual Behavioral Science (ACBS).

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Values, ACT, Mindfulness, Health/Behavioral Medicine
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Acceptance, Acceptance and commitment therapy, Mindfulness, Relational frame theory, Derived relational responding, Emotion and cognition, Emotion regulation, Behavior regulation, Psychological flexibility and inflexibility, Contextual psychology, Functional analysis, Behavioral psychology, Experimental analysis of behavior, Depression, Life satisfaction, Empathy, Implicit cognition, Implicit attitudes, Ddolescence, Young adults
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Relational Frame Theory, Contextual Behavioral Science, Functional Contextualism, language in therapy and psychopathology
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GUIDE FOR AUTHORS

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All manuscripts must clearly and explicitly be of relevance to CBS. You may find the JCBS article "Contextual Behavioral Science: creating a science more adequate to the challenge of the human condition" helpful in assessing whether your manuscript is likely to be of interest to readers of this journal.

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Strunk, W., Jr., & White, E. B. (2000). *The elements of style* (4th ed.). Longman (Chapter 4).
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Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). E-Publishing Inc.
Reference to a website:
Powertech Systems. (2015). *Lithium-ion vs lead-acid cost analysis*. Retrieved from http://www.powertechsystems.eu/home/tech-corner/lithium-ion-vs-lead-acid-cost-analysis/. Accessed January 6, 2016
Reference to a dataset:
[dataset] Oguro, M., Imahiro, S., Saito, S., & Nakashizuka, T. (2015). *Mortality data for Japanese oak wilt disease and surrounding forest compositions*. Mendeley Data, v1. https://doi.org/10.17632/xwj98nb39r.1.
Reference to a conference paper or poster presentation:
Engle, E.K., Cash, T.F., & Jarry, J.L. (2009, November). *The Body Image Behaviours Inventory-3: Development and validation of the Body Image Compulsive Actions and Body Image Avoidance Scales*. Poster session presentation at the meeting of the Association for Behavioural and Cognitive Therapies, New York, NY.

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Examples:
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Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2010). The art of writing a scientific article. *Journal of Scientific Communications, 163*, 51–59. https://doi.org/10.1016/j.Sc.2010.00372.
Reference to a journal publication with an article number:
Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2018). The art of writing a scientific article. *Heliyon*, *19*, e00205. https://doi.org/10.1016/j.heliyon.2018.e00205.
Reference to a book:
Strunk, W., Jr., & White, E. B. (2000). *The elements of style.* (4th ed.). New York: Longman, (Chapter 4).
Reference to a chapter in an edited book:
Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). New York: E-Publishing Inc.
Reference to a website:
Cancer Research UK. Cancer statistics reports for the UK. (2003). http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/ Accessed 13 March 2003.
Reference to a dataset:
[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T. (2015). *Mortality data for Japanese oak wilt disease and surrounding forest compositions*. Mendeley Data, v1. https://doi.org/10.17632/xwj98nb39r.1.
Reference to a conference paper or poster presentation:
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Appendix B: The Psychotherapy Outcome Study Methodology Rating Form (POMRF; Öst, 2008) - quality rating tool

Note: If not enough information is given regarding a specific item a rating of 0 is given.

1. Clarity of sample description

0 Poor. Vague description of sample (e.g. only mentioned whether patients were diagnosed with the disorder).

1 Fair. Fair description of sample (e.g. mentioned inclusion/exclusion criteria, demographics, etc.).

2 Good. Good description of sample (e.g. mentioned inclusion/exclusion criteria, demographics, and the prevalence of comorbid disorders).

2. Severity/chronicity of the disorder

0 Poor. Severity/chronicity was not reported and/or subsyndromal patients were included in the sample.

1 Fair. All patients met the criteria for the disorder. Sample includes acute (<1 yr) and/or low severity.

2 Good. Sample consisted entirely of chronic (>1 yr) patients of at least moderate severity.

3. Representativeness of the sample

0 Poor. Sample is very different from patients seeking treatment for the disorder (e.g. there are strict exclusion criteria).

1 Fair. Sample is somewhat representative of patients seeking treatment for the disorder (e.g. patients were only excluded if they met criteria for other major disorders).

2 Good. Sample is very representative of patients seeking treatment for the disorder (e.g. authors made efforts to ensure representativeness of sample).

4. Reliability of the diagnosis in question

0 Poor. The diagnostic process was not reported, or not assessed with structured interviews by a trained interviewer.

1 Fair. The diagnosis was assessed with structured interview by a trained interviewer.

2 Good. The diagnosis was assessed with structured interview by a trained interviewer and adequate inter-rater reliability was demonstrated (e.g. kappa coefficient).

5. Specificity of outcome measures

0 Poor. Very broad outcome measures, not specific to the disorder (e.g. SCL-90R total score).

1 Fair. Moderately specific outcome measures.

2 Good. Specific outcome measures, such as a measure for each symptom cluster.

6. Reliability and validity of outcome measures

0 Poor. Measures have unknown psychometric properties, or properties that fail to meet current standards of acceptability.

1 Fair. Some, but not all measures have known or adequate psychometric properties.

2 Good. All measures have good psychometric properties. The outcome measures are the best available for the authors' purpose.

7. Use of blind evaluators

0 Poor. Blind assessor was not used (e.g. assessor was the therapist, assessor was not blind to treatment condition, or the authors do not specify).

1 Fair. Blind assessor was used, but no checks were used to assess the blind.

2 Good. Blind assessor was used in correct fashion. Checks were used to assess whether the assessor was aware of treatment condition.

8. Assessor training

0 Poor. Assessor training and accuracy are not specified, or are unacceptable.

1 Fair. Minimum criterion for assessor training is specified (e.g. assessor has had specific training in the use of the outcome measure), but accuracy is not monitored or reported.

2 Good. Minimum criterion of assessor training is specified. Inter-rater reliability was checked, and/or assessment procedures were calibrated during the study to prevent evaluator drift.

9. Assignment to treatment

0 Poor. Biased assignment, e.g. patients selected their own therapy or were assigned in another non-random fashion, or there is only one group.

1 Fair. Random or stratified assignment. There may be some systematic bias but not enough to pose a serious threat to internal validity. There may be therapist by treatment confounds. N may be too small to protect against bias.

2 Good. Random or stratified assignment, and patients are randomly assigned to therapists within condition. When theoretically different treatments are used, each treatment is provided by a large enough number of different therapists. N is large enough to protect against bias.

10. Design

0 Poor. Active treatment vs. WLC, or briefly described TAU.

1 Fair. Active treatment vs. TAU with good description, or placebo condition.

2 Good. Active treatment vs. another previously empirically documented active treatment.

11. Power analysis

0 Poor. No power analysis was made prior to the initiation of the study.

1 Fair. A power analysis based on an estimated effect size was used.

2 Good. A data-informed power analysis was made and the sample size was decided accordingly.

12. Assessment points

0 Poor. Only pre- and post-treatment, or pre- and follow-up.

1 Fair. Pre-, post-, and follow-up <1 year.

2 Good. Pre-, post-, and follow-up ⩾ 1 year.

13. Manualized, replicable, specific treatment programs

0 Poor. Description of treatment procedure is unclear, and treatment is not based on a publicly available, detailed treatment manual. Patients may be receiving multiple forms of treatment at once in an uncontrolled manner.

1 Fair. Treatment is not designed for the disorder, or description of the treatment is generally clear and based on a publicly available, detailed treatment manual, but there are some ambiguities about the procedure. Patients may have received additional forms of treatment, but this is balanced between groups or otherwise controlled.

2 Good. Treatment is designed for the disorder. A detailed treatment manual is available, and/or treatment is explained in sufficient detail for replication. No ambiguities about the treatment procedure. Patients receive only the treatment in question.

14. Number of therapists

0 Poor. Only one therapist, i.e. complete confounding between therapy and therapist.

1 Fair. At least two therapists, but the effect of therapist on outcome is not analyzed.

2 Good. Three, or more therapists, and the effect of therapist on outcome is analyzed.

15. Therapist training/experience

0 Poor. Very limited clinical experience of the treatment and/or disorder (e.g. students).

1 Fair. Some clinical experience of the treatment and/or disorder.

2 Good. Long clinical experience of the treatment and the disorder (e.g. practicing therapists).

16. Checks for treatment adherence

0 Poor. No checks were made to assure that the intervention was consistent with protocol.

1 Fair. Some checks were made (e.g. assessed a proportion of therapy tapes).

2 Good. Frequent checks were made (e.g. weekly supervision of each session using a detailed rating form).

17. Checks for therapist competence

0 Poor. No checks were made to assure that the intervention was delivered competently.

1 Fair. Some checks were made (e.g. assessed a proportion of therapy tapes).

2 Good. Frequent checks were made (e.g. weekly supervision of each session using a detailed rating form).

18. Control of concomitant treatments (e.g. medications)

0 Poor. No attempt to control for concomitant treatments, or no information about concomitant treatments provided. Patients may have been receiving other forms of treatment in addition to the study treatment.

1 Fair. Asked patients to keep medications stable and/or to discontinue other psychological therapies during the treatment.

2 Good. Ensured that patients did not receive any other treatments (medical or psychological) during the study.

19. Handling of attrition

0 Poor. Proportions of attrition are not described, or described but no dropout analysis is performed.

1 Fair. Proportions of attrition are described, and dropout analysis or intent-to-treat analysis is performed.

2 Good. No attrition, or proportions of attrition are described, dropout analysis is performed, and results are presented as intent-to-treat analysis.

20. Statistical analyses and presentation of results

0 Poor. Inadequate statistical methods are used and/or data are not fully presented.

1 Fair. Adequate statistical methods are used but data are not fully presented.

2 Good. Adequate statistical methods are used and data are presented with M and SD.

21. Clinical significance

0 Poor. No presentation of clinical significance was done.

1 Fair. An arbitrary criterion for clinical significance was used and the conditions were compared regarding percent clinically improved.

2 Good. Jacobson's criteria for clinical significance were used and presented for a selection (or all) of the outcome measures, and conditions were compared regarding percent clinically improved.

22. Equality of therapy hours (for non-WLC designs only)

0 Poor. Conditions differ markedly (>20% difference in therapy hours).

1 Fair. Conditions differ somewhat (10–19% difference in therapy hours).

2 Good. Conditions do not differ (<10% difference in therapy hours).

Appendix C: International Journal of Adolescence and Youth guidelines for authors

International Journal of Adolescence and Youth

Instructions for authors

COVID-19 impact on peer review
As a result of the significant disruption that is being caused by the COVID-19 pandemic we understand that many authors and peer reviewers will be making adjustments to their professional and personal lives. As a result they may have difficulty in meeting the timelines associated with our peer review process. Please let the journal editorial office know if you need additional time. Our systems will continue to remind you of the original timelines but we intend to be flexible.

Thank you for choosing to submit your paper to us. These instructions will ensure we have everything required so your paper can move through peer review, production and publication smoothly. Please take the time to read and follow them as closely as possible, as doing so will ensure your paper matches the journal's requirements.

For general guidance on every stage of the publication process, please visit our Author Services website.

For editing support, including translation and language polishing, explore our Editing Services website

Contents

- Copyright Options
- Complying with Funding Agencies
- My Authored Works
- Reprints

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- Should be written with the following elements in the following order: title page; abstract; keywords; main text; acknowledgements; notes on contributor(s); references; appendices (as appropriate); table(s) with caption(s) (on individual pages); figure caption(s) (as a list).
- Should be no more than 8000 words, inclusive of tables, figure captions, footnotes, endnotes.
- Should contain an unstructured abstract of 150 words.

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Updated 9-03-2020

Appendix D: Participant Information Sheet for Empirical Project

University of East Anglia

Research Information Sheet

Study title: Exploring the Possible Selves, Activity and Wellbeing of Young People During the COVID-19 Pandemic

Name of Researcher: *Jo Spauls, Trainee Clinical Psychologist*

1. Invitation

My name is Jo Spauls and I am a Trainee Clinical Psychologist at the University of East Anglia (UEA). We would like to invite you to take part in our research study exploring how young people imagine themselves in the future, how they spend their time and how this is related to wellbeing during the coronavirus pandemic. Please take the time to read through this sheet carefully. It is up to you if you would like to take part and it is fine if you decide not to take part. Please do contact me if you have any questions or require further information.

My research supervisors are Dr Jo Hodgekins and Dr Laura Pass.

2. Why are we doing this research?

We would like to gain a better understanding of what factors are associated with wellbeing during the coronavirus pandemic. Research has demonstrated how engaging in activities, such as employment, education and leisure, can have a positive impact on mental health and wellbeing. However, due to government policies on social distancing and lockdown restrictions, usual activities have changed. We would like to explore the types of activities young people are currently engaging in and the relationship to wellbeing. We are also interested in what young people hope for or fear about their future. These hoped for or feared futures can be described as "possible selves". An example of a hoped-for self might be "I hope to run my own business" and an example of a feared self might be "I fear not getting a job". It has been suggested that these possible selves can motivate individuals to engage in behaviours that move them towards their hopes and away from their fears.

It is hoped that by understanding how these possible selves may be related to how people spend their time and their wellbeing, this could inform the development of future interventions for promoting wellbeing and buffering against mental health difficulties in young people.

3. **Why have I been asked to take part?**

We will be asking young people aged between 16 and 25 years across England to take part in the research study. The Mancroft Advice Project (MAP) are also promoting our research as we are interested in how the coronavirus pandemic is impacting on young people who may also live in areas of higher deprivation. These areas may be particularly affected by the policies used to manage coronavirus, which may then have a greater impact on wellbeing.

4. **Do I have to take part?**

Taking part in the research is completely voluntary: you can choose to participate or not.

5. **What will I have to do if I choose to take part?**

If you choose to participate in the study, we will first ask you to complete a consent form to show you have read and understood this information sheet and you are happy to take part.

Once you have provided your consent to take part, you will then be provided some questionnaires to complete. These will ask some information about you, such as your age, gender, ethnicity and the first part of your postcode, and then questionnaires on possible selves, how you spend your time and wellbeing. The study should take approximately 40 minutes to complete.

If you would no longer like to take part in the study, you are free to exit the survey at any point during the study by closing the web-page. You will not need to provide any reason for this and your data will not be stored. If you decide to no longer take part, you will be able to withdraw from the study at any time up until the point of data analysis by contacting the research team.

We would also like to follow up participants for future research within the next 12 months. If you are contacted by email to participate in further research, your participation is still voluntary and you can choose to not take part. If you do choose to participate again, you will be provided an information sheet again and asked for your consent to take part.

6. **What are the possible disadvantages or risks to taking part?**

It is possible that you may feel upset when answering questions on wellbeing. It is normal to find that these questions can make you either feel good or upset, depending on how you relate to the questions at the moment. If you wish to stop taking part in the study, that is absolutely fine. We have included some contact details at the end of this information sheet and on each page of the survey should you feel concerned about your wellbeing and would like some support. You will also be provided with a debrief sheet at the end of the study which will include contact details also.

7. **What are the possible benefits to taking part?**

There will be no immediate benefits to you however as thank you for your participation, you will be put in a prize draw for a £25 amazon voucher. This will happen automatically, providing you complete the survey and have not withdrawn your data by the time it is analysed. This research is to explore the relationships between young people's possible selves, the amount of time spent engaging in activities and their wellbeing. This information will allow us to consider the development of future interventions that may be helpful in supporting young people.

8. **Will my information be kept private if I take part?**

Everything you tell us will be kept confidential. This means that no one else but us will know what you have told us. We will not be asking for you name or other personal details. We will, however, ask if you would like to provide your email address so that we can contact you if you win the prize draw and to ask if you would like to take part in the study again in the next 12 months. Your email address and first part of your postcode will be removed from your survey and will be stored separately to your questionnaire, connected by your unique research ID number. You will be contacted by your email address once the study has finished if you have won the prize draw and to be asked if you would like to participate again.

The information gathered in this study may be used in other future research. Your data will be anonymous for these purposes.

This research has been reviewed and approved by the UEA ethics committee.

9. Contact for further information

If you have any questions about the study, please do contact me at j.spauls@uea.ac.uk. I will be very happy to answer any questions you may have. If you would like to speak to one of my supervisors, please email: j.hodgekins@uea.ac.uk

If you are unhappy about the way you have been treated or wish to make a complaint, please contact Professor Niall Broomfield (Course Director, Doctoral Programme in Clinical Psychology, UEA) by telephone: 01603 593600 or email: N.Broomfield@uea.ac.uk.

10. Contact details for support

If you feel concerned about your wellbeing during or following this study, we have listed some support helplines below. These will also be available on each page of the questionnaires, should you need support:

Samaritans: 08457 90 90 90
Free confidential 24 hour helpline

Hopeline UK: 0800 068 4141 or text 07860039967
Free confidential line, open 9am – 10pm weekdays, 2pm – 10pm weekends, 2pm – 10pm bank holidays

Appendix E: Participant Consent Form for Empirical Project

CONSENT FORM

Title of Project: Exploring the Possible Selves, Activity and Wellbeing of Young People During the COVID-19 Pandemic

Name of Researcher: Jo Spauls, Trainee Clinical Psychologist

Please tick in the box if you agree with the following statements:

1. I confirm that I have read the information sheet dated 24/10/2020 (version 6) for the above study. I have had the opportunity to consider the information, contact the researcher to ask questions and have had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time during the online survey without giving any reason, and without being penalised or disadvantaged ☐
3. I understand that once my data has been submitted, I will be able to withdraw up until data is analysed. After this, I will not be able to withdraw my data. ☐
4. I understand that my data may be used anonymously in future research ☐
5. I give my consent to take part in the above study. ☐
6. I consent to be contacted via email within the next 12 months by the research team to be asked if I would like to take part in further research ☐

Email Address:	

Appendix F: Participant Debrief Sheet for Empirical Project

DEBRIEF SHEET

Study title: Exploring the Possible Selves, Activity and Wellbeing of Young People During the COVID-19 Pandemic

Name of Researcher: *Jo Spauls, Trainee Clinical Psychologist*

Thank you for taking part in this study. There were several aims of this research; one was to describe the types of hoped-for and feared selves young people report. We were also interested in how optimistic young people are about achieving their hoped-for selves, how specific they are in describing their possible selves and whether their hoped-for and feared selves are balanced. We also wanted to know whether these have changed since the onset of the coronavirus pandemic. We also wanted to explore what activities young people are engaging in during the coronavirus pandemic and how this may relate to possible selves and wellbeing.

There has recently been a shift towards promoting wellbeing in building resilience against mental health difficulties in the future. We are hoping this study will help us better understand the relationship between possible selves, wellbeing and activity in young people, to help inform future preventative interventions.

If you have decided that you would like to withdraw your data now, please select the 'withdraw data' button available on this webpage. You can also withdraw your data at any time up until the point of data analysis. If you have any questions about the study or wish to withdraw your data, please do contact me at j.spauls@uea.ac.uk, if you would like to speak to one of my supervisors, please email: j.hodgekins@uea.ac.uk.

If you are unhappy about the way you have been treated or wish to make a complaint, please contact Professor Niall Broomfield (Course Director, Doctoral Programme in Clinical Psychology, UEA) by telephone: 01603 593600 or email: N.Broomfield@uea.ac.uk.

If you feel concerned about your wellbeing, please speak with your GP. If you are currently in education, your college or university may be able to offer you support or can point you in the right direction to get help. We have also listed some helplines below:

Samaritans: 08457 90 90 90
Free confidential 24-hour helpline

Hopeline UK: 0800 068 4141 or text 07860039967
Free confidential line, open 9am – 10pm weekdays, 2pm – 10pm weekends, 2pm – 10pm bank holidays

Thank you once again for taking part in this study.

Appendix G: Letter of Ethical Approval for Empirical Project

Faculty of Medicine and Health Sciences Research Ethics Committee

University of East Anglia

Joanne Spauls
Norwich Medical School
University of East Anglia
Norwich Research Park
NR4 7TJ

NORWICH MEDICAL SCHOOL
Bob Champion Research & Educational Building
James Watson Road
University of East Anglia
Norwich Research Park
Norwich NR4 7UQ

Email: fmh.ethics@uea.ac.uk
www.med.uea.ac.uk

14th May 2020

Dear Joanne

Title: Exploring the Relationships Between Possible Selves, Activity and Wellbeing in Young People

Reference: 2019/20-083

Thank you for your email of 12th May 2020 notifying us of the amendments you would like to make to your above proposal. These have been considered and I can confirm that your amendments have been approved.

Please can you ensure that any further amendments to either the protocol or documents submitted are notified to us in advance, and that any adverse events which occur during your project are reported to the Committee.

Approval by the FMH Research Ethics Committee should not be taken as evidence that your study is compliant with GDPR and the Data Protection Act 2018. If you need guidance on how to make your study GDPR compliant, please contact your institution's Data Protection Officer.

Please can you arrange to send us a report once your project is completed.

Yours sincerely

Prof Alastair Forbes
Chair
FMH Research Ethics Committee

COVID-19: *The FMH Research Ethics Committee procedures remain as normal. Please note that our decisions as to the ethics of your application take no account of Government measures and UEA guidelines relating to the coronavirus pandemic and all approvals granted are, of course, subject to these. If your research is COVID-19 related it will naturally be expedited. If the current situation means that you will have to alter your study, please submit an application for an amendment in the usual way.*

Appendix H: Letter of Approved Final Amendment for Empirical Project

Faculty of Medicine and Health Sciences Research Ethics Committee

University of East Anglia

Joanne Spauls
Norwich Medical School
University of East Anglia
Norwich Research Park
Norwich
NR4 7TJ

NORWICH MEDICAL SCHOOL
Bob Champion Research & Educational Building
Rosalind Franklin Road
University of East Anglia
Norwich Research Park
Norwich NR4 7UQ

Email: fmh.ethics@uea.ac.uk
www.med.uea.ac.uk

9th November 2020

Dear Joanne

Title: Exploring the Relationships Between Possible Selves, Activity and Wellbeing in Young People

Reference: 2019/20-083

Thank you for your email of 25th October 2020 notifying us of the amendments you would like to make to your above proposal. These have been considered and I can confirm that your amendments have been approved.

Please can you ensure that any further amendments to either the protocol or documents submitted are notified to us in advance, and that any adverse events which occur during your project are reported to the Committee.

Approval by the FMH Research Ethics Committee should not be taken as evidence that your study is compliant with GDPR and the Data Protection Act 2018. If you need guidance on how to make your study GDPR compliant, please contact your institution's Data Protection Officer.

Please can you arrange to send us a report once your project is completed.

Yours sincerely

Dr Jackie Buck
Chair
FMH Research Ethics Committee

COVID-19: The FMH Research Ethics Committee procedures remain as normal. Please note that our decisions as to the ethics of your application take no account of changes in Government measures and UEA guidelines relating to the coronavirus pandemic and all approvals granted are, of course, subject to these.

Appendix I: Demographic information

Please tell us a little bit about you…

Age:	
Gender	I identify as… Male Female Other
First part of your postcode: This will consist of two letters and either one or two numbers. For example, if your postcode is NR1 8HG, we would just like to know NR1. If your postcode is NR29 1KL, then we would just like to know NR23.	

Please tick the box which best describes you	
White British	
White Irish	
Any other White background	
White and Black Caribbean	
White and Black African	
White and Asian	
Any other mixed background	
Indian or Indian British	
Pakistani or Pakistani British	
Bangladeshi or Bangladeshi British	
Any other Asian background	
Caribbean or Caribbean British	
African or African British	
Any other Black background	
Chinese	
Any other ethnic group	
I don't want to say	

Appendix J: The Possible Selves Questionnaire with COVID-19 Adaptations

Possible Selves Questionnaire

Who will you be in the future? Each of us has some image or picture of what we will be like and what we want to avoid being like in the future.

Hoped-for Possible Selves
Think about what you would **ideally like** to be doing in the future.

- In the lines below, write what you **hope** you will be like and what you **hope** to be doing in the future.
- In the space next to each **hoped-for self**, mark NO (X) if you are not currently working on that goal or doing something about that **hoped-for self** and mark YES (X) if you are currently doing something to get to that **hoped-for self**.
- For each **hoped-for self** that you marked YES, use the space to the right to write what you are doing to attain that goal.

I hope to be…	Am I doing something to be that way		If yes, What I am doing now to be that way in the future?
	NO	YES	

For each **hoped-for self** rate the following:

- How much does this describe you now?
- How much will this describe you in the future?
- How much would you like this to describe you?

0 = not at all, 1 = a little, 2 = somewhat, 3 = quite a bit, 4 = very much

Have your hopes for the future changed since the onset of the coronavirus pandemic? Please tick one of the following options:

- ☐ **Yes – I feel more hopeful**
- ☐ **Yes – I feel less hopeful**
- ☐ **No – about the same**

Expected Possible Selves

Think about what you expect to be doing in the future.

- In the lines below, write what you **expect** you will be like and what you **expect** to be doing in the future.
- In the space next to each **expected self**, mark NO (X) if you are not currently working on that goal or doing something about that **expectation** and mark YES (X) if you are currently doing something to get to that **expected self**.
- For each **expected self** that you marked YES, use the space to the right to write what you are doing to attain that goal.

I expect to be…	**Am I doing something to be that way**		**If yes, What I am doing now to be that way in the future?**
	NO	**YES**	

For each **expected self** rate the following:

- How much does this describe you now?
- How much will this describe you in the future?
- How much would you like this to describe you?

0 = not at all, 1 = a little, 2 = somewhat, 3 = quite a bit, 4 = very much

Have your expectations for the future changed since the onset of the coronavirus pandemic? Please tick one of the following options:

- ☐ **Yes – I have higher expectations**
- ☐ **Yes – I have lower expectations**
- ☐ **No – about the same**

Feared Possible Selves

In addition to expectations and expected goals, we all have images or pictures of what we don't want to be like; what we don't want to do or want to avoid being. First, think a minute about ways you would **not** like to be in the future -- t*hings you are concerned about or want to avoid being like.*

- Write those concerns or **feared possible selves** in the lines below.
- In the space next to each concern or **feared self**, mark NO (X) if you are not currently working on avoiding that concern or to-be-avoided self and mark YES (X) if you are currently doing something so this will not happen in the future.
- For each concern or **feared self** that you marked YES, use the space at the end of each line to write what you are doing to reduce the chances that this will describe you in the future. Use the first space for the first concern, the second space for the second concern and so on.

I fear…	**Am I doing something to be that way**		**If yes, What I am doing now to be that way in the future?**
	NO	**YES**	

For each **feared self** rate the following:

- How much does this describe you now?
- How much will this describe you in the future?

- How much would you like this to describe you?

0 = not at all, 1 = a little, 2 = somewhat, 3 = quite a bit, 4 = very much

Have your fears for the future changed since the onset of the coronavirus pandemic? Please tick one of the following options:

- ☐ **Yes – I feel more fearful**
- ☐ **Yes – I feel less fearful**
- ☐ **No – about the same**

Appendix K: Possible Selves Coding and Scoring Manual – Content Domains

0 Not Given

When the participant is not able to respond with any possible self then it is included in this group.

1 Personal Development

When the content of the possible self is related to any personal development it is included in this category. Development can be in any area in which learning or time spent planning or working is necessary.

Personal development is defined as:

- Educational references either occupationally or for personal interests. (E.g. Hobbies, college/uni courses, travel.)
- Occupational references. (E.g. Work, jobs, earning)
- Independence from services

2 Possessions

When the content of the possible self relates to material possessions it is included in this category. Possessions are defined as the following:

- Ownership/lack of any material object (E.g. Home, car)
- Financial references (E.g. Money, debt)

3 Emotional/Physical Well Being

When the content of the possible self relates to any physical or mental well being it is included in this category. This includes emotionally related experiences and specific mental health concerns. This category includes the following:

- Feelings/emotions. (E.g. Being sad, happy, bad, lonely)
- Physical health. (Physical illness, injuries, severe accidents)
- Mental health references (Incl., stress, hospitalisation, suicide excl. alcohol and drugs selves)

4 Interpersonal Relations

When the content of the possible self relates to other people it is included in this category. As well as references to relationships with family and friends this also includes being alone.
This includes the following:

- Family
- Friends
- Spending time with others

When rating the possible selves there should be as little subjective decision on the content of the possible self. Only rate the words, as they are in the possible self.

If more than one possible self is mentioned (e.g. Save money and get married) the first self is taken (save money).

If self does not refer to the 'self' in the future (e.g. global warming) it is coded as 'not given'. A balance is found if any of the expected self-categories match with any of the feared self-categories after the selves are coded. A self can only be used once therefore the range is 0 (no same coded selves) to 3 (all selves match).

Appendix L: Possible Selves Coding and Scoring Manual – Optimism

Optimism

The possible selves interview includes quantitative ratings (on a 0-4 Likert scale) on the question "How much would you like this to describe you" for each hoped-for self. Optimism in achieving hoped-for selves will be calculated by looking at these quantitative ratings. There can be up to three hoped for selves per participant, which will require calculation of a 'total optimism score' between 0 and 12. The optimism score will be calculated independently for both of the above Likert style questions. The total optimism scores will be divided by the number of hoped for selves given to account for variation in number of selves given per participant and provide an average score. The two optimism scores calculated then allow for a discrepancy score to be calculated to explore whether there is significant differences between the ratings

Appendix M: Possible Selves Coding and Scoring Manual – Specificity

This section looks at coding the specificity, or how specific, the possible selves are. 'Specific' is defined as being particular, exact, clearly defined or identified, and not vague (Stevenson, 2010).

0 Not Given

When the participant has not given a response and the possible self is left blank then it is scored in this domain.

1 General Comment

When the content of the possible self is short, non-descript (does not describe what the possible self would look like) and lacks any reference to specific people, places, time-frames or roles.

This includes short comments such as: "at college", "a relationship", "good/part/time/wellpaid job", "feel better", "relapse", "a family/have kids", "married with children", "taking drugs or alcohol", "stay the same" and "own place".

2 More Detailed

When the content of the possible self describes what the possible self would look like in a little bit of detail. Generally more than one or two words would be used and qualifying characteristics (adjectives) will start to be used, which add detail to the possible self. This may include details such as colour, number, size and origin etc. General examples include: "In a loving relationship of mutual respect", "seeing or hearing things again", "a three-bedroomed house", "full time job at £30,000-£40,000", "part-time job, something simple to start off with".

The possible self will usually have **no more than one** reference to:

a) Specific people - using names or positions in the family, such as 'John', 'parent(s)' or 'Aunt'. Words such as 'family' or 'friend(s)' do not count as specific people.
b) Specific places or names - using names of cities, institutions or businesses.
c) Explicit use of time-frames - such as 'in 2 weeks' or 'next year'. Ambiguous or implied time-frame by using terms such as "still" or "again" are not sufficient.

d) Specific roles - such job roles (e.g. ‘nurse’, ‘electrician’) or other roles such as ‘Christian’, ‘DJ’ or ‘footballer’ or ‘mother’.

Examples would be “a nurse or carer”, which names the job role(s) but no time frame, name of company, place of work or any other detail.
Other examples include: “be an art teacher”, “live in London”, “6 children”, “finish a PhD in maths” and “a job next year”.

Overall, the possible self is detailed enough that it does not meet the criteria for a score of 1 but does not have enough detail to obtain a score of 3.

3 Specific Details
When the content of the possible self contains some detail and describes what the possible self would look like. The statement **must have one or more** references to specific people, places, time-frames or roles (as explained above) **and** other additional details. Examples include: “job in engineering design near my home” and “I'd like a job which fulfils my potential something like graphic design”.
It is **not sufficient** to have a short 2-3 word possible self with mention one reference to specific people, time-frames or roles with one qualifying characteristic (adjective), such as “be a successful DJ”.
Other possible selves that would meet criteria of having specific details include: “working as a retail assistant at ‘Johnny’s’ place”, “at UEA studying Maths”, “like to help mum/’Jane’ financially”, “More time to do something for myself, for example art or aerobics class” or “I would like to have my home decorated by interior designers”.
Additional information on coding for specificity

- Specificity scores are to be summed for each participant’s hoped, expected and feared possible selves, resulting in a minimum score of 0 and a maximum score of 27. The specificity score must then be divided by the total number of possible selves given to provide an average score.
- When rating the possible selves there should be minimal subjective decision making on the content of the possible self. Only rate the words, as they are in the possible self (using the guidance above).
- In situations where it is ambiguous or unclear which score is indicated for a possible self, the “benefit of the doubt” rule should be used. If a possible self is on

the borderline between a score of 2 or 3, a score of 3 should be given if it could be reasonably considered to meet this specificity score. This decision can be further indicated where there is sufficient elaboration on a possible self or where the possible self is lengthier than what is normally seen in the lower coding score.

Appendix N: Possible Selves Coding and Scoring Manual - Balance

Balance (adapted from Clarke, 2016)

Once the possible selves are coded into domains, participants will be allocated as having either 'balanced' or 'non-balanced' possible selves. Participants will be considered to have balanced possible selves if 50% or more of their expected possible selves match the general domain and topic as the feared possible selves. For example, an expected possible self might be "I want to be employed" and a feared possible self might be "I will always be unemployed".

This coding process is adapted from the procedure detailed by Clarke (2016), using a percentage rather than a number of possible selves to avoid bias of number of possible selves reported.

Additional information for coding balance:

- If a participant has only given two hoped-for or expected possible selves, then only one possible self would need to be balanced, as this would count as 50%.
- If the person only has one hoped-for or expected possible self listed, then this would need to be balanced with one of the feared possible selves in order to meet the 50% cut-off.
- A possible self can only be included once in the balance calculation. For example if a person had two hoped for selves related to swimming, and only one feared self related to swimming, then the feared self can only be counted against one of the hoped-for selves.
- Hoped-for possible selves will also be coded for balance against feared selves using the same methodology. This should be explored with caution however, as some hoped-for selves can have content such as "I hope to win the lottery" which you might not expect someone to fear if it does not come to pass. Therefore more emphasis may want to be placed on expected-feared possible selves balance.
- In situations where it is ambiguous or unclear whether a possible self is balanced or unbalanced, the "benefit of the doubt" rule should be implemented. An example of when this rule may be triggered is where the expected possible self mentions "have a girlfriend" and the feared possible self mentions "being alone". While the feared possible self does not explicitly state "not have a girlfriend", it is in the same

domain (interpersonal relations) and could be reasonably considered to meet a score of “balanced”. In contrast, if the feared self mentioned “lose my family”, this would be in the same domain (interpersonal relations) but could not be reasonably considered to be related to “have a girlfriend”. Therefore this would be scored as “unbalanced”.

Appendix O: Short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS) Measure (Redacted)

Appendix P: Time Use Diary

What is your main activity? Please tick one of the following:

- ☐ Employment
- ☐ Education
- ☐ Caregiving
- ☐ Not in Employment, Education or provide caregiving

If you answered employed, education or caregiving, approximately how many hours per week do you spend on this activity?

Instructions:

It should be quite easy to fill in the time use diary. We would like you to complete this for the **LAST WEEKDAY.** If you are taking part in this study on a Tuesday, Wednesday, Thursday, Friday or Saturday, you will complete this diary based on yesterday. If you are completing this study on a Sunday or Monday, please complete this diary based on the previous Friday. For example, if today is Wednesday, I would complete the diary from 4am Tuesday morning until 4am today, Wednesday morning. It will be easier to complete the diary if you first read these brief instructions.

What were you doing?

In the "What were you doing?" questions, we would like you to record your activities for every 30-minute period. The diary starts at 04.00 (am) and covers 24 hours. If you did more than one thing at the same time, please write the one you regard as the *main* activity. If you did one thing after another within a 30-minute interval, record the activity that took the most time. If you were doing something you feel is too private to record, please write "personal".

What else were you doing?

If you were doing more than one thing at the same time, record the second activity in the under the "What else were you doing" question. Suppose you were taking care of a child (main activity) and watching television at the same time, then record "watching television" as parallel activity. *You* decide which is the main and which is the secondary activity. Please remember to mark the duration of parallel activities, which might differ from the duration of the main activity.

Where were you?

Please select the options that apply to where you were at that time from: at home, at work (outside of the home), at sixth form, college or university (outside of the home) or outside of the home (other).

Were you alone or together with somebody you know? For each 30-minute period, please tick one or more boxes to show if you were alone or together with somebody you know. To be together does not necessarily mean that you actually do things together but rather that somebody else is on hand (e.g. at home). You don't have to answer this question for sleeping time.

			Where were you?				Were you with anybody?					
	What were you doing? If you were still doing the same activity as the previous 30 minutes, please write "same" and move onto the next time slot.	Were you doing anything else?	At home	At work (outside of the home)	At sixth form/college/university	Other outside of home	Alone	With a partner who lives in my household	With parent/s who live in my household	With a child under 9 years old who lives in my household	With another household member	With another person I know who does not live in my household
4am to 4:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4:30am to 5am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5am to 5:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5:30am to 6am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6am to 6:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6:30am to 7am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7:am to 7:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7:30am to 8am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8am to 8:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8:30am to 9am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9am to 9:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9:30am to 10am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10am to 10:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10:30am to 11am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12pm to 12:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12:30pm to 1pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
1pm to 1:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
1:30pm to 2pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2pm to 2:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2:30pm to 3pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3pm to 3:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3:30pm to 4pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4pm to 4:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

			Where were you?				Were you with anybody?					
	What were you doing? If you were still doing the same activity as the previous 30 minutes, please write "same" and move onto the next time slot.	Were you doing anything else?	At home	At work (outside of the home)	At sixth form/college/university	Other outside of home	Alone	With a partner who lives in my household	With parent/s who live in my household	With a child under 9 years old who lives in my household	With another household member	With another person I know who does not live in my household
4:30pm to 5pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5pm to 5:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5:30pm to 6pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6pm to 6:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6:30pm to 7pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7pm to 7:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7:30pm to 8pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8pm to 8:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8:30pm to 9pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9pm to 9:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9:30pm to 10pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10pm to 10:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10:30pm to 11pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
11pm to 11:30pm			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
11:30pm to 12am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12am to 12:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12:30am to 1am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
1am to 1:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
1:30am to 2am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2am to 2:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2:30am to 3am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3am to 3:30am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3:30am to 4am			☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Thank you for your time completing the diary. Was this an ordinary or unusual day for you during the current COVID-19 pandemic?

- ☐ An ordinary day
- ☐ An unusual day