Longitudinal Effects of Engagement with Workplace Health Programmes on Employee Outcomes: A Relational Perspective

RUNNING HEAD: A Relational Perspective to Workplace Health Programmes

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This is the peer reviewed version of the following article: Fida, R., Game, A., Stpamek, M. & Gendronneau, C. (2021) Longitudinal Effects of Engagement with Workplace Health Programmes on Employee Outcomes: A Relational Perspective, British Journal of Management, which has been published in final form at [https://doi.org/10.1111/1467-8551.12565].

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ABSTRACT

Organisations increasingly adopt health and wellbeing programmes (HWPs), yet little is known about the underlying processes or boundary conditions that may influence the effectiveness of these initiatives on employee outcomes such as wellbeing and job satisfaction. In a 3-year study, we adopted a social exchange approach to examine: 1) the role of relational context in mediating the links between employee engagement with HWPs and wellbeing and job satisfaction over time, and 2) whether organisational prioritisation of HWPs moderates the relationship between engagement with HWPs and quality of relationships at work. The results of our multilevel and longitudinal structural equation model (N=7,785 UK employees, nested within 64 organisations) showed that the more employees engage with HWPs the better the quality of co-worker relationships, the less they experience bullying over time, and the better their longer-term wellbeing and job satisfaction. Against expectations, organisational prioritisation of HWPs did not moderate the link between HWPs engagement and perceived co-worker relationship quality. Theoretical and practical implications of the study are discussed.

Keywords:

wellness programmes, wellbeing, social exchange, bullying, longitudinal

Longitudinal Effects of Engagement with Workplace Health Programmes on Employee Outcomes: A Relational Perspective

Workplace health and wellbeing programmes (HWPs) are increasingly adopted by organisations (Reif et al., 2020) and while a growing literature indicates HWPs may enhance employee wellbeing and job satisfaction (Joseph, Walker and Fuller-Tyszkiewicz, 2018; Maravelias, 2009; Ott-Holland, Shepherd and Ryan, 2019), little is understood about the underlying processes through which HWPs influence employee outcomes, nor the boundary conditions of such processes. To begin to address these gaps, the aim of this research is to investigate two possible mediating mechanisms and one moderating mechanism. First, we examine the role of relational context (i.e., workplace relationship quality and bullying) in mediating the link between employees' engagement with HWPs and their job satisfaction and wellbeing over time. Second, we adopt a multilevel perspective to test whether organisational prioritisation of HWPs moderates the relationship between engagement with HWPs and quality of workplace relationships.

Organisational HWPs aim to reduce healthcare costs (Keller et al., 2009), improve mental and physical health and wellbeing, and increase productivity (Johnson, Robertson and Cooper, 2018; Joseph, Walker and Fuller-Tyszkiewicz, 2018; Maravelias, 2009; Mattke et al., 2015). Early research investigated HWPs' efficacy in reducing organisational healthcare costs (see Baicker, Cutler, & Song, 2010), but more recent studies explore how HWPs influence organisationally beneficial employee outcomes (Ott-Holland, Shepherd and Ryan, 2019). Although evidence is mixed and some previous research designs lack rigour (Song and Baicker, 2019), positive associations have been found with job satisfaction, productivity, organisational commitment, and reduced absenteeism (Joseph, Walker and Fuller-Tyszkiewicz, 2018; Kuoppala, Lamminpää and Husman, 2008).

Parks and Steelman (2008) posited broadly that relational processes may underpin employee effects of HWPs. Consistent with positive organisational support (POS, Eisenberger et al., 1986) HWPs communicate that an employer cares about their employees (Huettermann and Bruch, 2019). Similarly, emerging findings on caring organisations suggest any organisational policies or practices showing care and support for employees may enhance wellbeing in part by addressing individual relatedness needs (e.g., Carmeli et al., 2017). However, the nature of specific relational processes (e.g., type and quality of social interactions) that may help explain the effectiveness of HWPs remains unexplored both conceptually and empirically.

In light of this, we develop and test a model to investigate whether employee engagement with HWPs indirectly influences wellbeing (i.e., physical and mental health) and attitudinal outcomes (i.e., job satisfaction) through an association with the workplace relational context. In this study, engagement with HWPs is the degree to which an employee is aware of and participates in one or more elements of their organisation's HWPs. We examine both general (perceptual) and specific (behavioural) relational context variables as sequential mediators connecting HWPs and individual outcomes, specifically: 1) employees' perception of the quality of co-worker relationships in their organisation (general); and 2) employees' self-reports of their experience of workplace bullying (specific). **We focus on bullying for two reasons. First, the strong link between quality of work relationships and bullying is well established both theoretically and empirically (e.g., Andersson and Pearson, 1999; Lim, Cortina and Magley, 2008; Jenkins et al., 2012). Second, while a great deal of literature on workplace bullying has explored the factors increasing the risk of being bullied, understanding the factors which could decrease it – as in the present study – remains one of the key theoretical challenges in the field** (Einarsen et al., 2018; Nielsen and Einarsen, 2018)**.**

Drawing on POS (Eisenberger et al., 1986), which is underpinned by social exchange theory (Blau, 1964), we propose that employees reciprocate the care, respect and investment shown in them by their organisation (via the provision of HWPs) with more respectful interpersonal interactions, such that they perceive a more positive working relationship quality overall among colleagues. **In addition, drawing on the bullying literature (e.g., Andersson and Pearson, 1999; Lim, Cortina and Magley, 2008; Jenkins et al., 2012), we expect the experience of workplace bullying to be reduced in a context with more respectful working relationships.** In turn, a more positive relational context (i.e., high relationship quality and reduced bullying) is expected to relate to improved longer term mental and physical health as well as job satisfaction. Further, in line with theory and research on psychological safety climate (Dollard and Bakker, 2010), we propose organisational prioritisation as a boundary condition to the HWPs-relationship quality association. To the extent that senior managers do not prioritise their organisation's programmes (despite making them available), employees may perceive that they and their welfare are not genuinely valued and feel less inclined to reciprocate with 'good behaviour'. In turn, the relational (bullying), wellbeing and attitudinal benefits of HWPs should be attenuated over time.

This study makes several contributions. First, we contribute conceptually to the HWP literature by proposing and finding support for an indirect relational path through which HWPs may influence employee health and wellbeing. The present study is the first to our knowledge that investigates the roles of specific relational variables (co-worker relationship quality and bullying). This is important because literature on HWPs 'is somewhat less clear with respect to the actual effects on employees' behaviour' (Tetrick and Winslow, 2015, p.595), and it addresses calls to examine 'more proximal mechanisms' linking programme participation to outcomes (Ott-Holland, Shepherd and Ryan, 2019, p.175).

Second, this study extends understanding of the employee benefits of HWPs beyond employee health and work outcomes to the interpersonal domain. HWPs are primarily adopted to improve employee health and, in some organisations, to reduce medical costs (Reif et al., 2020). We suggest HWPs also have ‘unintended’, or unanticipated, positive relational effects that may serve as important mechanisms for indirectly achieving the intended health and wellbeing outcomes.

Third, we address calls **in the bullying literature (Nielsen and Einarsen, 2018)** for more research exploring how organisational support mechanisms contribute to reducing workplace bullying (Nielsen and Einarsen, 2018; Parzefall and Salin, 2010). Specifically, we propose an indirect positive association between HWPs and reduced workplace bullying through employees’ perceptions of co-worker relationship quality.

Fourth, few existing observational studies of HWPs adopted rigorous research designs (Ott-Holland, Shepherd and Ryan, 2019; Zhang, Dawson and Kline, 2021). Conducted longitudinally over 3 years, with data from almost 8,000 employees (nested in 64 organisations), our study supports a more generalisable understanding of how HWPs may link to job satisfaction and wellbeing through previously unexplored relational effects.

Finally, prior research typically only assessed employee participation versus non-participation in HWPs. Yet, in line with organisational care literature (e.g., Carmeli et al., 2017) in this study we aim to capture employee engagement with HWPs with a more nuanced approach using a measure which ranges from being unaware of HWPs to participating in at least one initiative.

Workplace Health and Wellbeing Programmes

Workplace health and wellbeing programmes, (HWPs), feature on- or off- site services offered by organisations, typically through HR departments, strategically aimed at improving employees’ health and wellbeing and more generally their quality of life (Parks and

Steelman, 2008; Wolfe, Parker and Napier, 1994). Programmes vary in scope and comprehensiveness but can include a broad range of information, health screening and activities which attempt to reduce health risks, prevent chronic disease, support healthy behaviours or attempt to identify and change potential health-related problems (Goetzel and Ozminkowski, 2008; Quintiliani et al., 2007). Harvey (2019) distinguishes between workplace health promotion programmes, which reflect an organisation's corporate social responsibility towards employees and corporate wellness initiatives, which service business interests (e.g., reducing costs). National and organisational contexts (e.g., the presence of private versus public healthcare systems and/or whether organisations cover healthcare insurance costs) may contribute to these differing agendas. We adopt the term HWPs as an overarching term to incorporate any type of practice or procedure that is designed to improve employee mental or physical health and wellbeing, irrespective of organisational agenda or type of programme.

There is an ongoing debate in the literature about the effectiveness of HWPs. While prior systematic reviews and meta-analyses evidence the range of benefits of these initiatives (irrespective of type of programme) including reduced healthcare costs and positive associations with employees' health and productivity (Anderson et al., 2009; Goetzel et al., 2014; Murphy et al., 2018; Parks and Steelman, 2008), more recent randomised control trials found only limited or no effects (Jones, Molitor and Reif, 2019; Reif et al., 2020; Song and Baicker, 2019). However, there is evidence suggesting that HWPs are positively associated with important employee attitudes and behaviours, including job satisfaction, intention to remain and turnover (e.g., Ott-Holland, Shepherd and Ryan, 2019; Parks and Steelman, 2008). Meta-analysis shows the positive effects of participation in HWPs are not fully dependent on the type of programme accessed – Parks and Steelman (2008) found that whether participating in a 'fitness only' or more comprehensive programme, employees who participated in HWPs were less frequently absent from work. Such findings raise interesting unanswered questions concerning the processes by which HWPs shape employee outcomes. As a preliminary attempt to address this gap, we draw on POS and social exchange theory to develop a relational perspective.

Perceived Organisational Support and Social Exchange Theory

Perceived Organisational Support (POS) is characterised by employees' perceptions that they are valued and their wellbeing is of genuine concern to their employer (Eisenberger et al., 1986, 2002; Rhoades and Eisenberger, 2002). Several studies indicate that organisational provision of work-life benefits, including HWPs (e.g., Muse et al., 2008), increases POS (e.g., Casper and Harris, 2008; Muse et al., 2008; de la Torre-Ruiz, Vidal-Salazar and Cordón-Pozo, 2019). This aligns with organisational care literature suggesting organisational policies and practices that demonstrate value and concern for employee welfare serve as 'anchoring points' (Chiaburu et al., 2015) helping employees form perceptions that their employer cares (e.g., Carmeli et al., 2017). Similarly, Casper and Harris (2008) drew on signalling theory (see Connelly et al., 2011 for a review) to explain the connection between work-life benefits and POS, proposing that supportive and caring organisational practices serve as signals of the employer's investment in and recognition of employees' contributions.

A central tenet of POS is social exchange theory (e.g., Blau, 1964), which explains how employees trade positive attitudes and behaviours in exchange for external (e.g., pay, promotion) and/or intrinsic (e.g., self-esteem, positive regard, care) organisational rewards (Eisenberger et al., 1986). Specifically, according to the norm of reciprocity, the perception of organisational care and support (i.e., POS) invokes felt obligation or indebtedness which employees seek to repay (through extra efforts and commitment) to restore equilibrium in the exchange relationship (Rhoades and Eisenberger, 2002). Additionally, by fulfilling employees' socio-emotional needs for belongingness, approval and esteem, POS shapes employees' social identity and strengthens their sense of organisational membership (Rhoades and Eisenberger, 2002). Employees may also feel motivated to reciprocate the fulfilment of their socio-emotional needs through positive attitudes and behaviours towards the organisation (Baran, Shanock and Miller, 2012). Taken together, HWPs should be viewed by employees as signals that the organisation is genuinely concerned for their welfare, and this perception of organisational support evokes reciprocity norms and a sense of socioemotional fulfilment, with consequences for employee (interpersonal) behaviour, job attitudes and wellbeing.

HWPs, Perceived Co-Worker Relationship Quality and Outcomes

While little or no research has directly investigated HWPs and relational correlates, indicative studies connect broader work-life benefits to increased employee organisational citizenship behaviours (e.g., Lambert, 2000; Lin, Chen and Chen, 2016). Work-life benefits packages are assumed to create a positive exchange relationship, as employees seek to reciprocate the receipt of valued resources (Muse et al., 2008). Research found employees may select to rebalance felt obligation by exerting extra effort and performance (e.g., Muse et al., 2008), or by engaging in more prosocial behaviours (e.g., interpersonal helping, treating each other fairly) (Lambert, 2000; Muse et al., 2008). In light of this, employees' engagement with HWPs should be positively associated with perceived co-worker relationship quality.

In organisational literature, positive relationships between co-workers are broadly defined as involving mutually beneficial or equitable exchanges (e.g., Halbesleben, 2012; Roberts, 2007). Relationship quality has been more specifically operationalised in leader-follower dyads (e.g., Leader-Member Exchange; Graen and Uhl-Bien, 1995) and in teams (e.g., Team-Member Exchange; Seers, 1989) as the degree of mutual trust and respect in the focal relationship(s). Additionally, evidence suggests an important affective dimension since working relationships are often a mix of both positive and negative exchanges (Roberts, 2007), infused with interpersonal emotional undercurrents (e.g., Kahn, 1998). In line with this, workplace incivility studies attest to the affectively charged nature of co-worker interactions that transgress social norms of respect (e.g., Andersson and Pearson, 1999; Pearson and Porath, 2005). Combining these insights, we conceptualise perceived co-worker relationship quality as a generalised, individual-level perceptual construct, defined as: '*the extent to which employees perceive relationships with co-workers as mutually respectful, and free from emotional friction and strain'*.

The importance of the quality of the social context at work is well-established not only for employees' job satisfaction (Chiaburu and Harrison, 2008; Dimotakis, Scott and Koopman, 2011; Halbesleben, 2012) but also health and wellbeing (De Dreu, Van Dierendonck and De Best-Waldhober, 2003; Heaphy and Dutton, 2008). Positive social interactions foster employee satisfaction through fulfilment of interpersonal/relational and socioemotional needs (e.g., Humphrey, Nahrgang and Morgeson, 2007; Ilies et al., 2018; Kahn, 2007; Reich and Hershcovis, 2011) and by offering affective support (Chiaburu and Harrison, 2008). Positive relationships also affect the immune and hormonal systems, decrease the likelihood of cardiovascular problems and, in general, short- and long- term health problems (Heaphy and Dutton, 2008). Conversely, strained relationships at work characterised by mistrust, conflict and incivility negatively affect job satisfaction (Chiaburu and Harrison, 2008) and employee health (Mastroianni and Storberg-Walker, 2014; Pearson and Porath, 2005).

In sum, based on POS and social exchange theory, we anticipate that when employees engage with HWPs, it establishes a positive exchange dynamic in which they seek to repay the organisation's care and support with prosocial behaviours among co-workers, thereby facilitating positive working relationship perceptions overall. In turn, the perception of positive co-worker relationships will have beneficial consequences both for employee satisfaction and for health-related outcomes:

> *Hypothesis 1a: Employee engagement with HWPs is positively related to perceptions of co-worker relationship quality.*
>
> *Hypothesis 1b: Perceptions of higher quality co-worker relationships are positively related to changes in job satisfaction, physical and mental health over time.*
>
> *Hypothesis 1c: Employee engagement with HWPs is indirectly and positively related to changes in job-satisfaction, physical and mental health over time through perceptions of co-worker relationship quality.*

Influence of Workplace Bullying

Bullying, the perception of 'systematically and over a long period of time […] be(*ing*) on the receiving end of direct or indirect aggression in the workplace, in a situation in which the person(s) exposed to the treatment has difficulty in defending themselves against this treatment' (Matthiesen and Einarsen, 2010, p.205), is one of the most prevalent workplace threats to employee wellbeing (Suff and Strebler, 2006). A meta-analysis of 102 studies estimated that, across all continents, between 11 and 18% of the employees have experienced bullying (Nielsen et al., 2010).

Among factors affecting workplace bullying incidence (e.g., Hoel et al., 2010; Nielsen and Einarsen, 2018; Salin, 2003), previous research highlighted the important role of the workplace social environment. Strained and uncivil relationships at work increase employees' propensity to engage in aggressive and revengeful behaviour (e.g., Spector & Fox, 2005). More specifically, drawing on Job Demands-Resources theory (Bakker and Demerouti, 2007)**,** negative work relationships are viewed as a form of interpersonal stressor or job demand (Ilies et al., 2011). If individuals lack personal resources to cope or detach this creates a state of strain and distress that manifests as negative affect (e.g., Ilies et al., 2011), frustration and anger (Ilies et al., 2011; Spector and Fox, 2005). Negative affective activation derived from the appraisal of job stressors increases the likelihood of morally disengaging (Fida et al., 2015) and misbehaving at work (e.g., Spector & Fox, 2005). Similarly, the ‘negative spiral’ phenomenon describes how the emotional impact of negative social interactions prompts individuals to engage in retaliatory uncivil behaviour (Andersson and Pearson, 1999; Pearson, Andersson and Wegner, 2001). Hence, we anticipate that bullying is a specific behavioural response to the demands of co-worker relationship quality in the workplace.

There is strong evidence that experiencing systematic and prolonged bullying is a significant occupational stressor (Hauge, Skogstad and Einarsen, 2010; Nielsen and Einarsen, 2018) that negatively affects job satisfaction, performance and commitment (Moreno-Jiménez et al., 2009; Nielsen and Einarsen, 2012), and increases the risk of turnover (Nielsen and Einarsen, 2012). Workplace bullying also increases physical and mental health problems (Nielsen et al., 2014; Verkuil, Atasayi and Molendijk, 2015), post-traumatic stress disorder (Nielsen et al., 2015) and sickness absence (Nielsen, Indregard and Øverland, 2016). We hypothesise:

> *Hypothesis 2a: Employee perception of higher quality co-worker relationships is related to reduced bullying over time.*
>
> *Hypothesis 2b: Reduced bullying over time is positively related to changes in job satisfaction, physical and mental health.*

While much literature already explored factors increasing the risk of being bullied (Einarsen et al., 2018), few studies (e.g., Einarsen et al., 2018; Skogstad et al., 2011; Stouten et al., 2010; Warszewska-Makuch, Bedyńska and Żołnierczyk-Zreda, 2015;) examine factors that reduce the onset and prevalence of bullying. In this study, we investigate the role of HWPs in decreasing bullying over time through its association with co-worker relationship quality. As outlined above, based on POS and social exchange theory, HWPs are expected to engender a sense that the organisation values and cares for the wellbeing of its staff, and employees should reciprocate with more respectful and positive co-worker interactions. In turn, this should reduce the interpersonal job demands which create environmental triggers for bullying behaviours, and consequently decrease the presence of bullying as a workplace stressor detrimental to job satisfaction and wellbeing:

> *Hypothesis 3: Employee engagement with HWPs is indirectly and negatively related to changes in bullying over time through perceptions of co-worker relationship quality.*

> *Hypothesis 4: Employee engagement with HWPs is indirectly and positively related to changes in job-satisfaction, physical and mental health over time through perceptions of co-worker relationship quality and reduced experiences of bullying.*

Moderating Role of Organisational Prioritisation

The preceding discussion anticipated that the norm of reciprocity obligates employees to repay organisational investment in their wellbeing, with beneficial consequences for the social environment, as reflected in enhanced perceptions of co-worker relationship quality, and in turn reduced bullying and enhanced wellbeing and job satisfaction. Drawing further on POS and social exchange theory, and in line with theory and research on psychological safety climate which evidences the importance of management commitment in shaping employee wellbeing (Dollard and Bakker, 2010), we propose a boundary condition to the model (see Figure 1). Employee reciprocation in the social exchange process is not unconditional (Harvey, 2019), but dependent on employees’ beliefs about the organisation’s motivations (Eisenberger et al., 1997). Practices perceived as discretionary or voluntary on the part of senior management are more highly valued because they are interpreted as going beyond the minimum, thus signalling genuine care and respect for employees and their welfare (Casper and Harris, 2008; Eisenberger et al., 1997). Higher value placed on discretionary practices increases employees’ felt obligation to restore balance in the employee-employer relationship (Blau, 1964).

Conversely, we propose that when senior managers fail to prioritise, or lack visible commitment to HWPs despite making them available, employees may believe that the organisation's motivation for providing the programmes is more self-interested (e.g., as an external accreditation requirement) than driven by genuine care and respect for employees (Greasley and Edwards, 2015; Harvey, 2019). In such circumstances, HWPs may appear less discretionary – rendering them less highly valued and weakening employees' sense of obligation to the organisation (de la Torre-Ruiz, Vidal-Salazar and Cordón-Pozo, 2019). Furthermore, when employees perceive that their welfare, and by extension themselves, are not genuinely cared for and respected they should be less inclined to reciprocate with 'good behaviour' (Eisenberger et al., 1997), so weakening the predicted positive association between HWPs and perceptions of co-worker relationship quality:

> *Hypothesis 5: Organisational prioritisation of HWPs moderates the relationship between engagement with HWPs and co-worker relationship quality. When organisational prioritisation of HWPs is low, this association will be weakened. This in turn will also weaken the indirect effect of engagement with HWPs on bullying, job-satisfaction and wellbeing.*

Drawing on multi-level, longitudinal data we test these relationships, before discussing the findings and their implications for theory and practice.

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METHOD

Participants and Procedure

The data used in this study were secondary. Specifically, data were part of the 'Britain's Healthiest Workplace' – an annual online survey of UK organisations and their employees founded, promoted and collected by Vitality Health **in partnership with RAND[1]**. The survey gathers personal, social, lifestyle, job and workplace information from the employee and organisational perspective using self-report questionnaires. Any UK-based organisation employing at least 20 people, in any sector, can participate.

This study used 2015 (T1), 2016 (T2) and 2017 (T3) assessments. Data were matched across individuals across the three waves. The sample included 7,785 employees that participated in the 2015 survey and in at least one of the follow up surveys at T2 and T3 (6,505 participants were retained at T2 and 2,879 at T3; missing data were completely at random as discussed in the results section). Employees were nested within 64 organisations (average number of employees per organisation=121.64, SD=176.54). The sample was 53% male. At T1 participants worked on average 36.4 hours p/w (SD=5.58). Mean job tenure was 7.38 years (SD=9.38). Most earned £20,000-£29,999 (22.1%) or £30,000-£39,999 (21.8%). The study received ethical approval from the joint first authors' institutional research ethics committee. **Informed consent was obtained from all participants who provided data for the study. Ethical issues in relation to data collection were addressed at the point of data collection by RAND Europe.**

Measures

The employee- and employer-level surveys were administered online and consisted of approximately 150 and 90 questions in total, respectively. The present study used a sub-sample of these questions selected to address the research questions. The employee-level survey was completed by employees in an organisation which opted to participate. The employer-level survey was completed by a single representative chosen by the organisation. The survey was developed by Vitality Health, with most questions adopted from prior validated academic literature.

Engagement with HWPs was measured by two questions: 1) awareness of any HWPs offered by the organisation (using a list of 35 common HWPs, ranging from clinical screening and Employee Assistance Programmes to smoking cessation and cycling schemes, for example), 2) participation in any of the listed HWPs. In both cases employees were asked to select the HWPs that applied. For both questions, this resulted in a binary code for each of the 35 HWPs (i.e., 0=not aware, 1=aware; 0=non-participation, 1=participation). Both indicators showed good reliability (Cronbach's alpha .88 and .90 respectively). In order to construct an indicator of employees' level of engagement with HWPs we combined the two questions to create a categorical ordinal variable (0=not aware of any of the listed HWPs, 1=aware of at least one HWP but not participated, 2=participated in at least one HWP). This decision to combine the two questions was also empirically supported considering the high correlation between them ($r=.88$, $p<.001$).

Perceptions of co-worker relationship quality were assessed with three items by Cousins et al. (2004) capturing perceived levels of respect as well as friction among colleagues (from 1=Disagree to 5=Agree). An example item is "Relationships at work are strained". The scale showed good reliability (Cronbach's alpha = .77).

Workplace bullying was measured as perceived victimisation by using the self-labelling approach. Specifically, employees were presented with a single item assessing how frequently participants experienced such behaviour (Cousins et al., 2004) (from 1=Never to 5=Always). This approach has been demonstrated to be a valid and reliable way to measure workplace bullying (Nielsen et al., 2009).

Job satisfaction was measured with a single item asking participants to rate their overall satisfaction with their job using a 7-point Likert scale (from 1=Strongly Disagree to 7=Strongly Agree). Previous studies provided evidence of the reliability and validity of this type of approach (e.g., Dolbier et al., 2005; Wanous and Hudy, 2001; Wanous, Reichers and Hudy, 1997).

Physical and mental health were each measured using a single item assessing participants perceived overall health in these domains (Ahmad et al., 2014; Eisenhower, Baker and Blacher, 2009). Participants rated their health by using a 5-point scale (from 1=Very Bad to 5=Very Good). Previous studies provided evidence of appropriateness of using this type of approach to assess both physical and mental health (Ahmad et al., 2014; Idler and Benyamini, 1997).

Organisational prioritisation was measured at organisational level with two items. Employer were asked to indicate whether they encountered the following challenges when contemplating, planning and/or establishing a wellness facility, service or programme in their worksite: “Other company priorities are more important”; “Low leadership/senior management commitment”. The response options were either “Yes” or “No”.

Participants could complete the survey in multiple sittings, at any time within a given period of approximately two months. All data were anonymised by a contracted third party and no personally identifiable information was available to the researchers. All participants gave consent to use their anonymised data for research purposes, and in compliance with ethical regulations at the beginning of each survey. All variables were self-reported.

Data Analysis

To investigate the mediational model and ensure separation of the antecedents from the outcomes (see Figure 1), we used data from the three different waves of data collection as follows: 1) data from T1 assessed engagement with HWPs and quality of co-worker relationships; 2) data from both T1 and T2 captured change over time in bullying; and 3) data from T1 and T3 captured change over time in physical health, mental health and job satisfaction.

The posited model was investigated with structural equation modelling estimating a change-regression model (McArdle, 2009; McArdle et al., 2001; McArdle and Nesselroade, 1994) with MPlus 8.3 (Muthén and Muthén, 2017). This type of model overcomes the limitations of the cross-lagged regression model (McArdle, 2009). We were able to specify bullying, physical and mental health, and job satisfaction as latent variables capturing change over time, base-free. We were able to take into account interindividual differences as well as the arbitrary selection of the three waves (2015, 2016 and 2017) from ongoing processes (McArdle, 2009). Overall, this approach allowed testing of the longitudinal impact of engagement with HWPs and of co-worker relationship quality on bullying, wellbeing and job satisfaction by taking into account employees' levels on these dimensions at T1. Direct paths from HWPs at T1 to wellbeing and job satisfaction latent changes, and from HWPs to bullying latent change, were also included in the model. Engagement with HWPs was computed by averaging its indicators. Co-worker relationship quality at T1 was specified as a latent variable measured by its three indicators. Bullying, physical and mental health, and job satisfaction were defined as latent change variables. The power analysis (Cohen, 1988; Soper, 2017; Westland, 2010) confirmed the adequacy of the sample size used in this study (anticipated effect size=0.1, power level=0.8, minimum sample size to detect effect=1,599).

The mediational role of co-worker relationship quality was investigated by examining the confidence intervals (CIs; MacKinnon, 2012) of the indirect effects based on 5,000 bootstrap replications. Following investigation of the role of engagement with HWPs on co-worker relationship quality and bullying and in turn on wellbeing and job satisfaction outcomes, we investigated the boundary conditions of these relationships. In particular, we investigated the role of organisational prioritisation as a moderator of the association of engagement with HWPs with co-worker relationship quality.

The model fit was examined by analysing: a) chi-square test, b) comparative fit index (CFI; Bentler, 1990), d) root mean square error of approximation (RMSEA; Steiger, 1990) together with the test of close fit, and e) standardised root mean squared residual (SRMR; Hu and Bentler, 1999). Because employees' data were nested within organisations, the model was specified using 'type is complex' in MPlus. Given the non-normality of the distribution of bullying and the presence of missing data, the robust full-information maximum likelihood estimation method was used.

Before testing the research hypotheses, we examined descriptive statistics for all study variables, their correlations and the intraclass correlation coefficients. We also examined the measurement model and checked for common method bias (Harman, 1976) by comparing the measurement model with an alternative single-factor model.

RESULTS

Preliminary and Descriptive Analysis

To ascertain that missing data (16.4% missing data points for T2, 63% missing data points for T3) were completely at random (MCAR) we conducted Little's test. A non-significant result confirmed there were no systematic patterns in the missing data ($\chi^2(156)=176.435$, $p=.126$), hence for the following analysis we used the Full Information Maximum Likelihood (FIML) estimation method on the overall sample of 7,785 employees. Table 1 reports the descriptive statistics and correlations of the study variables. The ICCs ranged from .011 (bullying at T1) to .155 (engagement with HWPs), suggesting that contextual effects, although small, were relevant for some variables (Hox, Moerbeek and Van de Schoot, 2010). Most employees reported never experiencing bullying (85.3% at T1 and 69.2% at T2); 3.6% and 3.9% reported having sometimes been targets of bullying at T1 and T2 respectively; 0.7% and 10% reported having often or always been bullied at T1 and T2 respectively.

Correlational analysis showed that engaging with HWPs was positively associated with co-worker relationship quality and negatively, although marginally, with bullying at T1. HWP engagement was also associated with the wellbeing and job satisfaction indicators, except mental health, at T3. Co-worker relationship quality was associated negatively with bullying and positively with wellbeing and job satisfaction. Bullying was associated with all wellbeing and job satisfaction indicators. Finally, the wellbeing and job satisfaction indicators all correlated with each other.

Results of the measurement model (χ^2(df=29, N=7,785)=215.203, p<.01, CFI=.989, RMSEA=.029 (90% CI: .025, .032; p=1.00), SRMR=.035) attested the good fit to the data. The comparison with the one factor model (χ^2(df=54, N=7,785)=5389.978, p<.01, CFI=.757, RMSEA=.113 (90% CI: .110, .115; p<.001), SRMR=.110) also suggested the absence of common method bias (scaled $\Delta\chi^2$(25)=5387.83, p<.001).

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Outcomes of HWP engagement

Direct Effects. Results of the structural equation model are presented in Figure 2. The model yielded a good fit: χ^2(df=29, N=7,785)=124.12, p<.01, CFI=.995, RMSEA=.021 (90% CI: .017, .024; p=1.00), SRMR=.018. In line with Hypothesis 1a, engagement with HWPs was positively associated with co-worker relationship quality. The more employees engaged with initiatives the more they perceived respect and a lack of interpersonal friction and strain in their workplace. Also, in line with hypotheses, co-worker relationship quality at T1 influenced changes over time in bullying at work, in wellbeing and in job satisfaction. In particular, more positive relationship perceptions decreased bullying at work over one year (H2a) and improved job satisfaction, mental and physical health over two years (H1b). Partially supporting H2b, changes in bullying at work from T1 and T2 influenced changes in job satisfaction and mental health but not in physical health. Finally, although not specifically hypothesised, engagement with HWPs at T1 also predicted changes in physical health from T1 to T3, consistent with previous studies on direct effects of HWPs (e.g., Goetzel *et al.*, 2014).

Indirect Effects. Analysis of indirect effects largely confirmed the hypotheses. Employee engagement with HWPs at T1 indirectly affected changes in bullying from T1 to T2 through co-worker relationship quality at T1 (estimate=-.024, 95%CI: -.032, -.014) (H3). HWP engagement also indirectly affected changes in job satisfaction, physical health, and mental health from T1 to T3 through co-worker relationship quality at T1 (estimate=.034, 95%CI: .020, .050; estimate=.014, 95%CI: .008, .021; estimate=.018, 95% CI: .012, .026 respectively) (H1c). Finally, partially supporting Hypothesis 4, engagement with HWPs at T1 influenced changes in job satisfaction (but not physical or mental health) from T1 to T3 indirectly through co-worker relationship quality at T1 and changes in bullying from T1 to T2 (estimate=.003, 95%CI: .001, .004). Overall, the model explained 34% of the variance in job satisfaction changes, 21% of mental health changes and 23% in physical health changes.

Boundary conditions

Multilevel modelling tested the role of organisational prioritisation for wellbeing in hindering the effect of engagement with HWPs on co-worker relationship quality, bullying, wellbeing and job satisfaction. In contrast to Hypothesis 5, organisational wellbeing prioritisation did not moderate the relationship between engagement with HWPs and co-worker relationship quality (see Figure 2). Hence, even when senior managers are not committed to these initiatives, employee engagement with HWPs is associated with better relationships at work, which decrease bullying over time and improve wellbeing and job satisfaction.

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DISCUSSION

This study increases our understanding of the previously overlooked role of relational processes in explaining how workplace health and wellbeing programmes enhance employees' wellbeing and job satisfaction. Our findings highlight the 'unintended' yet beneficial association of HWPs with the workplace social environment. That is to say, while organisations may adopt HWPs primarily to target employee health and wellbeing directly, we found evidence that employees' social relationships also benefit. In particular, employees' degree of engagement with HWPs is associated with perceptions of a more respectful and less strained social environment that in turn predicts a reduction in bullying over time as well as positive changes in wellbeing and job satisfaction. Consistent with POS (Eisenberger et al., 1986) and literature on caring organisations (Carmeli et al., 2017), this supports the notion that through the availability of HWPs, employers communicate their care and concern for employees' wellbeing (Gubler, Larkin and Pierce, 2018), which is reciprocated through social exchange processes (Blau, 1964) with more respectful relationships at work and less bullying.

These findings make an important theoretical contribution to the literature on wellbeing programmes by illuminating an indirect path by which HWPs may be effective in improving employee health and wellbeing. Much previous research focused on evaluation of the direct health and economic effects of programme participation but did not explore the associated underlying mechanisms (e.g., Baicker, Cutler and Song, 2010; Jones, Molitor and Reif, 2019; Reif et al., 2020; Song and Baicker, 2019). Additionally, while some scholars have suggested the conceptual importance of HWPs for employees' attitudes and behaviour (Parks and Steelman, 2008; Ott-Holland, Shepherd and Ryan, 2019), this is the first longitudinal empirical study, to the best of our knowledge, to propose and find support for specific relational mediating mechanisms (i.e., quality of co-worker relationships and bullying) in the HWP – health and wellbeing link.

In line with literature on positive workplace relationships (Chiaburu and Harrison, 2008; Humphrey, Nahrgang and Morgeson, 2007; Ilies et al., 2018; Kahn, 2007; Mastroianni and Storberg-Walker, 2014; Reich and Hershcovis, 2011), our findings support the important role of respectful social interactions in promoting and enhancing wellbeing and job satisfaction. Speculatively, the availability of HWPs supports a social environment that is perceived as respectful, with low friction and anger, which may contribute to fulfilment of employees' interpersonal needs (e.g., Humphrey, Nahrgang and Morgeson, 2007; Ilies et al., 2018) and increase perceptions of social support (Chiaburu and Harrison, 2008). It is well-established that more friendly and supportive relationships positively influence employee attitudes and wellbeing (Thoits, 1995; Winstead et al., 1995). There is also strong evidence that social support buffers the negative effects of job demands on employees' wellbeing and job satisfaction (Bakker, Demerouti and Euwema, 2005; Karasek and Theorell, 1990). The present study is the first to connect these established associations between positive workplace relationships and wellbeing with the HWP context in general, and with employees' engagement with HWPs in particular.

In line with previous meta-analysis and observational studies (Anderson et al., 2009; Goetzel et al., 2014; Murphy et al., 2018; Parks and Steelman, 2008) we found a significant effect of HWPs on employee health and wellbeing outcomes. In contrast, recent randomised control trials did not find these links (Jones, Molitor and Reif, 2019; Reif et al., 2020; Song and Baicker, 2019). The disparity between our study and the randomised control trials might be related to some methodological aspects of our study such as national context (public versus private healthcare systems), a larger and more heterogenous sample of employees, and the longer timeframe.

This study also answers calls to investigate organisational factors that decrease workplace bullying (Nielsen and Einarsen, 2018). Our findings confirmed HWPs (even when not specifically targeting workplace relationships) were effective in reducing bullying over time through the perception of more positive relationships. The results suggest that to the extent that employees reciprocate organisational care with more respectful co-worker relationships the less likely they are to experience workplace bullying. This conclusion is necessarily tentative given that POS was not directly measured in the present study. However, supporting this inference, previous research has shown other types of employee benefits are associated with perceptions of organisational care and support (i.e., POS) (e.g., **Muse et al., 2008). Bullying is a serious organizational threat worldwide with clear consequences for the targets, the work group and the organization (Samnani and Singh, 2012). Hence, it is of critical importance to understand the factors that can help prevent it and our findings point to a novel avenue for further investigation. In particular, our findings suggest that engaging with HWPs (even if they are not specifically designed for improving relationships at work) may positively affect social interactions and in turn reduce the experience of bullying at work.**

Organisational prioritisation did not serve as a boundary condition in the relationship between HWPs and perceived quality of co-worker relationships. We expected to find a weaker relationship between when senior managers did not prioritise or fully commit to HWPs, since low prioritisation could be perceived as signalling the organisation does not *genuinely* care (Casper and Harris, 2008). Instead, employees’ engagement with HWPs was associated with more positive perceptions of co-worker relationships, and over time was related to less bullying and better wellbeing and job satisfaction, irrespective of whether senior managers also ‘walked the talk’ of caring about employee welfare. One possibility is that, in the absence of demonstrable senior management prioritisation, HWPs may nevertheless signal genuine care and engender perceptions of organisational support *if* employees value the HWPs. Previous research has shown that the value employees place on HWPs influences participation levels and, in turn, perceptions of organisational support for wellness (e.g., Ott-Holland, Shepherd and Ryan, 2019). This may be a useful avenue to explore in future research. Nonetheless, caution is advised before drawing conclusions about the irrelevance of senior leaders' commitment. The non-significant effects could also be related to our conservative method of analysis (i.e., using change scores as outcomes and testing the hypotheses over three years, controlling for Time 1 levels), and the small organisational sample size. Future studies should adopt a larger sample of organisations to rule this out.

Also contrary to hypotheses, reduced bullying was associated with better job satisfaction and mental health over time but not physical health. Additionally, the sequential mediation from HWPs to employee outcomes was significant only in the case of job satisfaction. Although the meta-analysis by Nielsen and colleagues did find a significant effect of bullying on physical health over time, they also found that self-labelling methods for assessing bullying had a smaller effect (Nielsen et al., 2014). Hence, we cannot exclude that our non-significant results might have a methodological explanation due to the way physical health was measured. Although the single item for assessing physical health has been demonstrated to be a valid indicator for predicting mortality (DeSalvo et al., 2006), it might be less adequate for capturing milder health complaints. However, it is also worth noticing that this non-significant effect is consistent with a recent longitudinal study (Magee et al., 2017). Overall, future studies should further investigate these links by using a broader range of measures as well as considering an even longer timeframe. It is indeed plausible that the effects of bullying on physical health might need more time to develop and they might also depend on the frequency and severity of bullying exposure.

Practical Implications

A key concern for organisations adopting HWPs is return on investment – the extent to which provision of initiatives will translate into outcomes with tangible employee and organisational benefits. Our study suggests HWPs can significantly influence key employee outcomes. Over three years, above and beyond direct effects (for which we controlled), HWPs significantly enhanced longer-term job satisfaction and health, and this was due to their influence on the organisation's social environment. Moreover, while a primary organisational motivation for HWPs is to improve employee wellbeing, our research highlighted important relational benefits including a reduction in bullying. For HR managers seeking to prevent workplace bullying (a costly workplace stressor, Nielsen and Einarsen, 2018), and enhance co-worker respect and civility, our findings suggest that health-related organisational initiatives that signal care for employees (Casper and Harris, 2008) may usefully supplement a tool-kit that includes more specific anti-bullying policies. The dual benefits demonstrated in our study – for workplace relationships as well as wellbeing and positive job attitudes – support the view that HWPs may be a worthwhile commitment for organisations.

Importantly, the relational, attitudinal and wellbeing outcomes were positively related to the degree of employee engagement (i.e., awareness plus participation) with HWPs in their organisations. Further research is needed to confirm causality, but our findings suggest that to maximise the benefits of HWPs, HR managers should encourage uptake and usage as widely as possible. Employees are more likely to engage with HWPs that have personal value or utility (Ott-Holland, Shepherd and Ryan, 2019). Core to understanding what is valued will be consulting employees, for example using staff surveys or focus groups.

Additionally, our findings reinforce the importance of organisations signalling their care for employee wellbeing. Involving employees in future decisions about program content and a targeted communication strategy employing a range of channels (e.g., newsletters, staff meetings, social media, dedicated staff webpages) could help not only to raise awareness of HWPs but also to show how the organization is responding with genuine interest and concern to the data gathered from consultation. These measures, and the provision of especially valued health-related resources, could increase employees' perceptions of organisational support and the climate for psychological safety (Dollard and Bakker, 2010). In turn, this may strengthen the sense of obligation to reciprocate the care shown (Muse et al., 2008) - with more of the respectful social interactions that may be associated with longer term changes in wellbeing and job attitudes.

Strengths, Limitations and Future Research Directions

A key strength of the present study is the rigorous approach to SEM analysis (Zhang, Dawson and Kline, 2021), and longitudinal, multi-source data, enabling assessment of whether HWPs predict employees' wellbeing and health through relational processes. This type of research design not only enhances internal validity but also helps address problems of common method bias (Podsakoff, MacKenzie and Podsakoff, 2012). Another strength is the large employee-level sample size which was much larger than that recommended by the power analysis. However, the organisation-level sample size was relatively small (*N*=64) and the research design has limitations in relation to the measurement selection and the number of waves.

Although we acknowledge that there might be some limitations of using single item measures for assessing bullying, wellbeing and job satisfaction this type of approach has been demonstrated to be valid and reliable (Dolbier et al., 2005; Fisher, Matthews and Gibbons, 2016; Idler and Benyamini, 1997; Nielsen, Notelaers and Einarsen, 2020; Wanous and Hudy, 2001). Nevertheless, reliance on non-standard measures for assessing HWPs and organisational prioritisation might have contributed to the modest coefficient sizes in the model and reduced the statistical power of the moderation test in particular. Furthermore, testing the posited model would have benefitted from four waves of data rather than three – we could only examine the engagement with HWPs and quality of co-worker relationships path cross-sectionally this time. These issues reflect the resource-intensive nature of data collection for this type of research and the need to keep multi-wave surveys as short as possible.

Given the wellbeing-related nature of the survey, we cannot exclude that participants self-selected based on their pre-existing interest in wellbeing, thereby possibly affecting the estimation of the coefficients. However, the examination of our hypotheses through a change-regression model (McArdle, 2009) allowed us to take into account interindividual differences and the arbitrary selection of the three occasions (2015, 2016 and 2017) from possible ongoing processes (McArdle, 2009). Based on the psychometric literature on longitudinal SEM (McArdle, 2009; McArdle et al., 2001; McArdle and Nesselroade, 1994), the change-regression model was the best approach to test our hypotheses considering the constraints of the design.

Additionally, we used self-reported data to assess mental and physical health, which although common practice in wellbeing research, might have reduced reliability. Another limitation to acknowledge is that the study relied on employees' perceptions of co-worker relationships, and estimates of the frequency of previous bullying incidents which both could be subject to recall and/or affective biases. Future researchers should use diary studies/experience sampling and multi-informant assessments. Our research assessed senior management prioritisation from the management perspective. A multi-source approach reduces the risk of common method bias (Homburg, Klarmann and Totzek, 2012; Podsakoff et al., 2003) but it is possible employee and management perceptions may differ. Future research could also use employee self-report measures such as psychological safety climate (Dollard and Bakker, 2010) to examine employee perceptions directly. Relatedly, in line with a more critical management perspective of HWPs (see for example Dailey, Burke and Carberry, 2018; Hull and Pasquale, 2018) it might be useful to distinguish organisational motivations for adopting HWPs (Harvey, 2019). Programmes that are adopted to serve ethical versus economic interest agendas may be perceived differently by employees, with implications for valuing and engaging with HWPs and reciprocation in the social exchange process.

Finally, it is important to acknowledge that engagement with HWPs was measured considering two different indicators: awareness of HWPs offered in the organisation and participation in any of the available initiatives. Although in our data these two indicators were very highly correlated (r=.88), as suggested by an anonymous reviewer, it would be plausible to hypothesise that awareness and participation might have a dual process of influence on employees' outcomes. For instance, while awareness might influence wellbeing and health indirectly through relational processes, participation in HWPs might affect these outcomes directly[2]. Future studies, possibly adopting a mixed methods approach, should further explore this hypothesis and gather a more nuanced picture of the interplay between awareness and participation as well as the possible role of the number and type of HWPs used.

CONCLUSIONS

This study contributes to previous research on the benefits of organisational wellness programmes by illuminating potential processes underlying their effectiveness. Our findings suggest a key factor in the success of wellness initiatives may stem from their positive association with the workplace social environment. The availability of HWPs can send a clear signal about how employers value their employees, which may be reciprocated with more respectful working relationships and consequently better wellbeing and job satisfaction. The social benefits of HWPs may provide an additional reason for organisations to consider their adoption.

FOOTNOTE

[1] The data used in this study were provided by Vitality. Please contact Martin Stepanek (martin.stepanek@vitality.co.uk) for questions concerning data availability.

[2] In order to rule out the possibility that using the single indicators rather than a combination of the two would have led to different results, we tested alternative models: 1) awareness only; 2) participation only. Results showed that these models led to the same findings as shown in Figure 2 with very similar structural coefficients. Both participation and awareness predicted changes in job satisfaction, mental and physical health across three years indirectly. In addition, they predicted physical health and job satisfaction directly.

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TABLES

Table 1. Descriptive statistics and correlations among the study variables

	N	**M (SD)** ***F (%)***	**ICC**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. Engagement with HWPs T1	7659	*0=402 (5.2)* *1= 1888 (24.7)* *2=5369 (70.1)*	.155	-								
2. Co-worker relationship quality T1	7758	3.75 (0.78)	.021	.083**	-							
3. Bullying T1	7757	1.20 (0.53)	.011	-.033**	-.395**	-						
4. Bullying T2	6505	1.24 (0.60)	.012	.015	-.309**	.498**	-					
5. Job Satisfaction T1	7783	5.47 (1.44)	.041	.077**	.467**	-.276**	-.193**	-				
6. Job Satisfaction T3	2879	5.31 (1.43)	.069	.089**	.321**	-.146**	-.219**	**.421****	-			
7. Physical health T1	7784	4.05 (0.77)	.020	.064**	.189**	-.111**	-.108**	.185**	.166**	-		
8. Physical health T3	2879	4.04 (0.77)	.040	.098**	.189**	-.084**	-.083**	.163**	.197**	**.584****	-	
9. Mental health T1	7785	4.18 (0.81)	.020	.035**	.286**	-.200**	-.184**	.334**	.230**	.462**	.371**	-
10. Mental health T3	2879	4.08 (0.85)	.024	.030	.240**	-.137**	-.165**	.261**	.344**	.338**	.462**	**.589**

Notes. HWP=Health and Wellbeing Programmes; M=Mean; SD=Standard Deviations; ICC=Intraclass correlations;
In italics frequencies and percentage of the categories of the Health and Wellbeing Programmes variable (0="not aware", 1="aware but not used"; 2="aware and used"). **: $p<.001$. T1=2015, T2=2016, T3=2017.

FIGURES

Figure 1. Posited model

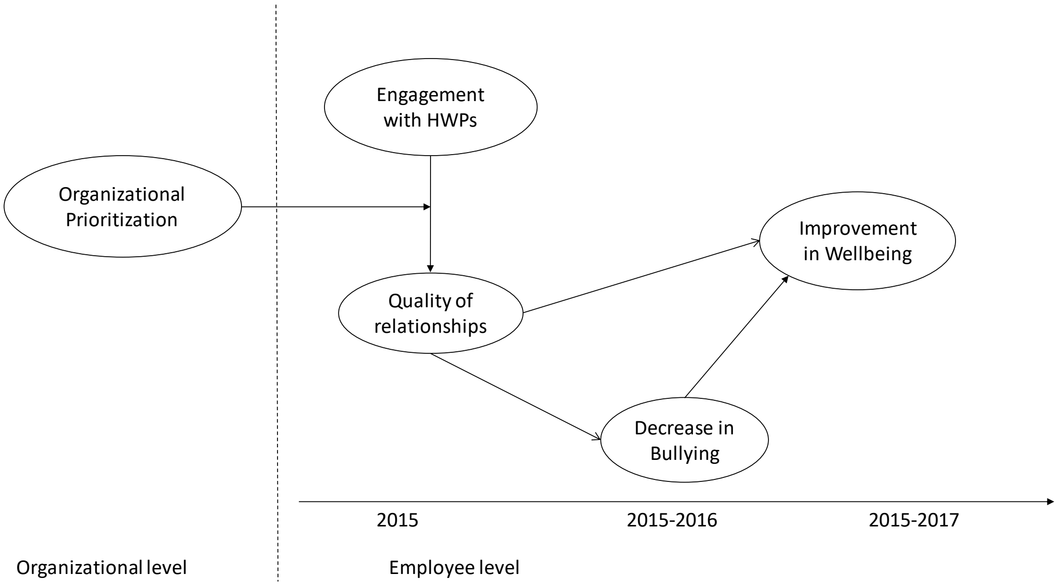
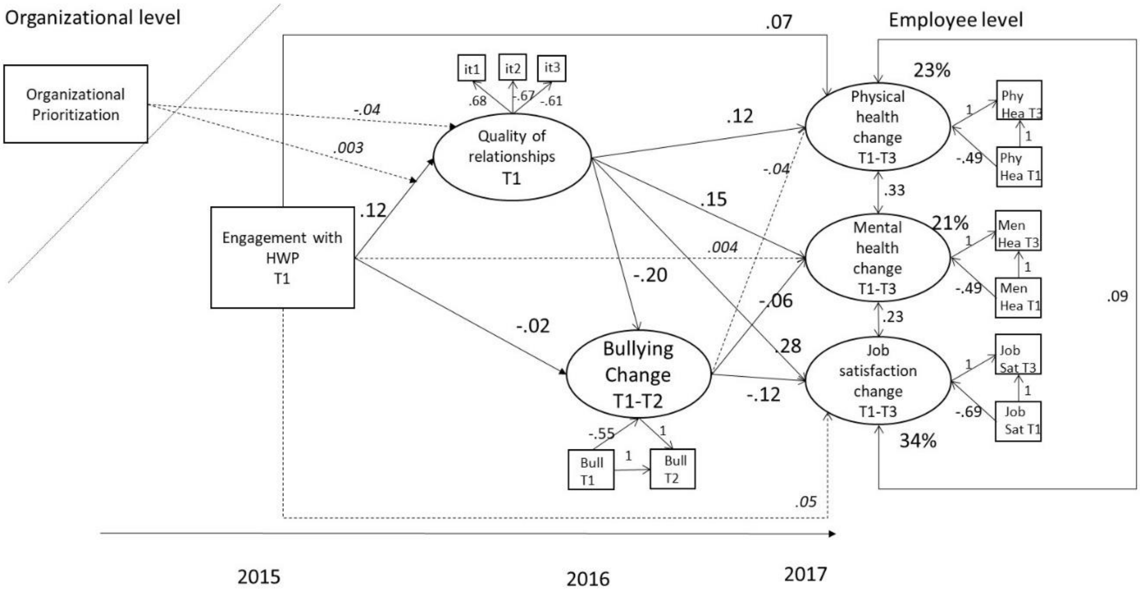

Engagement with HWPs
Organizational Prioritization
Improvement in Wellbeing
Quality of relationships
Decrease in Bullying
2015
2015-2016
2015-2017
Organizational level
Employee level

Figure 2. Results of the posited model


Organizational level
Employee level
Organizational Prioritization
-.04
.003
Engagement with HWP T1
.12
it1
it2
it3
.68
.67
-.61
Quality of relationships T1
.07
.12
.15
-.20
-.02
.004
-.04
-.06
.28
-.12
Bullying Change T1-T2
-.55
1
Bull T1
1
Bull T2
Physical health change T1-T3
23%
1
Phy Hea T3
1
-.49
Phy Hea T1
.33
Mental health change T1-T3
21%
1
Men Hea T3
1
-.49
Men Hea T1
.23
Job satisfaction change T1-T3
34%
1
Job Sat T3
1
-.69
Job Sat T1
.09
.05
2015
2016
2017

Note. Please note that bullying, physical health, mental health and job satisfaction have been defined as latent change scores (McArdle, 2009; McArdle et al., 2001; McArdle and Nesselroade, 1994). The figure reports the standardised coefficients. The coefficients on the dotted lines were not significant for *p*<.05. N=7,785