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A weekly diary, within-individual investigation of the relationship between exposure to bullying behavior, workplace phobia and post-traumatic stress symptomatology

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The present version of the manuscript is the final accepted version.

Author note:

- A preliminary version of this study has been presented by the first author at the “Bergen International Symposium on Workplace Bullying 2022”, Bergen (Norway), 2-3 June 2022, and at the 21st congress of the European Association of Work and Organizational Psychology, Katowice (Poland), 24-27 May 2023.
- The data and the syntax of the main analyses have been made available as supplementary material.

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Abstract

Most studies on workplace bullying have adopted a between-person approach, neglecting the potential within-individual fluctuations in the experience of bullying behaviors. However, investigating such fluctuations may prove useful for uncovering processes and mechanisms associated with bullying and its antecedents and consequences as they unfold over time. In the present study, based on recent discoveries on traumatic experiences and post-traumatic stress (PTS), we hypothesized that even short-term exposure to bullying behaviors – such as the exposure that characterizes an individual when the *time window* considered is a working week – may already have a substantial psychological impact at the within-individual level, as indicated by the experience of PTS symptoms. Additionally, we hypothesized that the development of workplace phobia may act as a mechanism linking the exposure to bullying behaviors during the week and the reported PTS symptomatology, and that person-level vulnerability factors to PTS (e.g., a recent trauma and female gender) accentuate the within-individual relationships. We tested the proposed hypotheses on a sample of 158 workers that were followed for six consecutive working weeks for a total of 860 observations. In line with other recent within-individual investigations, we found that exposure to bullying behaviors shows substantial week-level fluctuations. We also found overall support for the hypotheses, including evidence of a within-level lagged impact of bullying behaviors on workplace phobia, suggesting that even non-persistent exposure to such behaviors is related to potentially non-ignorable psychological suffering and PTS symptoms.

A weekly diary, within-individual investigation on the relationship between exposure to bullying behavior, workplace phobia and post-traumatic stress symptomatology

Workplace bullying is a distinct form of workplace aggression that, according to a common definition, refers to persistent exposure to repetitive negative social behavior at work, which comprises harassment, ostracism, exclusion, or actions that negatively affect the target's work, such as withholding of information that impairs performance and being given unmanageable workload (Einarsen et al., 2020). The phenomenon has been initially described by Leymann (1990) in a series of clinically oriented investigations in which he documented the psychologically aversive effects of bullying, including its traumatic consequences (Leymann & Gustavsson, 1996). Later studies confirmed that being exposed to workplace bullying has detrimental effects for the victims and their organizations, including anxiety, depression, long-term sickness absence, intention to leave, and early retirement from work (see Boudrias et al., 2021; Burr et al., 2022; Mikkelsen et al., 2020; Nielsen & Einarsen, 2018). A recent study showed that self-labelling as a victim of bullying was significantly related to subsequent suicide attempt and death by suicide as assessed by registered-based data (Conway et al., 2022).

From the available evidence, it is clear that workplace bullying is an extreme work-related social stressor, leading to consequences that are frequently more severe than those ensuing from more common psychosocial risk factors, such as high workload, role conflict and role ambiguity (Zapf & Einarsen, 2005). Additionally, workplace bullying presents a non-ignorable prevalence, which was estimated at 3-4% for severe bullying, and between 10 and 20% for less severe forms of the phenomenon (Zapf et al., 2020).

Our understanding of workplace bullying has increased substantially in the last decade or so, leading the way to first attempts in developing preventive assessment tools, treatments and interventions (see Gillen et al., 2017; Li et al., 2019; Tuckey et al., 2022). Despite these advancements, there is still insufficient fine-grained knowledge of processes and mechanisms

explaining both the occurrence and the effects of bullying (Nielsen & Einarsen, 2018; Taris, 2022). One reason is that most studies in the field have adopted a between-person approach, focusing on individual differences in exposure to bullying and linking these to work-related and personal variables. However, the evidence built on between-person studies overlooks the existence of within-individual variance in workplace bullying, the modelling of which is essential for elucidating processual aspects and mechanisms involved in a phenomenon that is dynamic in nature and that unfolds over time as a function of the daily interactions between targets and their social and organizational context. For instance, a general idea among scholars in the field (see Einarsen, 2000; Leymann, 1996; Nielsen & Einarsen, 2018) is that bullying usually escalates over time, with the initial phase being characterized by sporadic and subtle negative acts that may be difficult to identify, while later stages entail more frequent and direct aggressive acts such as verbal mistreatment and humiliation in public. Such observations are compatible with the idea that bullying, rather than being a static phenomenon, mirrors a dynamic social interaction, implying that there is meaningful within-individual variation in the experience of bullying behaviors. Investigating such a variation is thus critical to further our understanding of the phenomenon and how to effectively tackle it.

More recently, it has become clear that relationships and mechanisms uncovered based on between-person studies might differ from those based on within-person investigations (Myin-Germeys & Kuppens, 2021). Importantly, theoretical propositions about the escalation of bullying and its effects (see Einarsen, 2000; Leymann, 1996) are within-individual in nature, since they specify how work events, situations, or behaviors experienced by an individual (e.g., negative acts) engender subsequent reactions (e.g., psychological dysfunctions) in the same individual, thus postulating causal linkages in within-person terms. As a result, testing such linkages with designs that are not at the same level of analysis (i.e., between-person methods) may lead to conclusions that may or may not be accurate (see Gabriel et al., 2019).

Therefore, within individual investigations may enable us to reveal unique aspects of bullying which are still poorly understood (e.g., short-term reactions and processes which may operate within longer-term dynamics) and/or shed light on whether the link between bullying and other variables (e.g., antecedents and consequences) still hold when examined from a within-person perspective. Establishing homologous relationships at different levels of analysis is key for providing solid evidence on the validity and generalizability of the nomological network of the investigated phenomenon (see Chen et al., 2005), an issue that has been neglected in bullying research so far. Additionally, within-individual investigations have a value in terms of practical implications: For example, gaining a better understanding of the nuances of the ‘immediate’ psychological reactions to bullying (e.g., types of symptomatology) is crucial for the optimization of preventive interventions, such as when and how to intervene – an area in need of further development (see Zapf & Vartia, 2020). Indeed, such understanding may help develop more sensitive approaches to the counselling of targets and the training of organizational leaders and managers on how to deal with bullying-related situations (see McNutt, 2019). Appropriate counselling and intervention on early symptoms of psychopathology following exposure to bullying behaviors may be also important for reducing the risk of developing full-blown disorders (Bosman et al., 2019; Karsten et al., 2011), which may predict further and increased exposure to bullying behaviors as proposed by the “individual disposition” or “easy target” hypothesis on the escalation of bullying (see Reknes et al., 2021).

In a systematic review on the available longitudinal research on the consequences of workplace bullying, Boudrias et al. (2021) found that only three out of 54 studies have examined the consequences of the phenomenon by using a within-individual approach. In the first, Tuckey and Neall (2014) found that, in weeks with a higher exposure to bullying behavior, participants reported also less optimism and self-efficacy, with emotional exhaustion mediating the relationships between bullying and the outcome. In another study

(Rodríguez-Muñoz et al., 2017), it was found that daily exposure to bullying was related to daily conflicts at home through the mediation of daily psychological detachment and daily distress. In a third study (Hoprekstad et al., 2019), it was found that, on days where employees were exposed to bullying behaviors, they also reported a more depressed mood. More recently, by using a weekly study design, Rodríguez-Muñoz et al. (2020) identified different within-individual trajectories of exposure to bullying behaviors across four weeks. Interestingly, they also found that the trajectory of anxiety and depressive symptoms experienced by the participants across the same period was very similar to the evolution of exposure to bullying behaviors, suggesting that the symptoms could reflect a short-term response to the negative acts. In a similar vein, very recently Trépanier et al. (2022) documented a relationship between being subjected to daily bullying behaviors and psychological need frustration as indicated, for example, by perceived rejection and oppression.

Overall, these studies suggest that employees' experience of bullying behaviors does fluctuate daily/weekly – in one study (Rodríguez-Muñoz et al., 2017), 39% of the variance in the experience of negative acts was located at the within-individual level – and that such fluctuations are significantly associated with their well-being and functioning. However, Boudrias et al. (2021) and others (e.g., Nielsen & Einarsen, 2018; Taris, 2022) concluded that, since little is known regarding the daily and weekly reactions to exposure to bullying behaviors, there is a need for more research focusing on this level of analysis

Thus, the main objective of the present study is to explore, through a weekly diary study, the within-individual relationship between exposure to bullying behaviors and post-traumatic stress (PTS), a psychological symptomatology that is believed to be a typical reaction to bullying (see Leymann & Gustafsson, 1996). We will also test the idea that workplace phobia, that is, a dysfunction consisting of an intolerable level of anxiety related to the workplace, may be a significant phenomenon linking bullying to PTS symptomatology. In

so doing, we will explore aspects of the short-term strain generation mechanism instigated by the exposure to bullying behaviors. Additionally, since the recent experience of a traumatic event (e.g., death of the spouse) and female gender are well established vulnerability factors for the manifestations of PTS symptoms (see Sayed et al., 2015), we will test the hypotheses that the path linking being the target of bullying behaviors to PTS through workplace phobia may be particularly accentuated for employees who have recently experienced one or more traumatic events, and for female employees. In the following paragraphs, we will provide theoretical arguments and review previous empirical findings as basis for the development of the study hypotheses.

Exposure to bullying behaviors and post-traumatic stress symptoms

It has long been recognized that the different symptoms commonly reported by victims of bullying, such as anxiety and irritability, sleeping problems, concentration difficulties, and somatic complaints of different types, are very similar to those characterizing individuals with Post-Traumatic Stress Disorder (PTSD), which represents a particularly severe psychological condition. According to the ICD-11 (WHO, 2022), PTSD is typically the result of being exposed to an extremely threatening event or series of events, manifesting in symptoms of re-experiencing (e.g., sudden flashbacks of the traumatic experience, nightmares), avoidance (e.g., avoidance of people or situations reminiscent of the event/s), and persistent perceptions of heightened current threat (e.g., hypervigilance or an enhanced startle reaction to stimuli such as unexpected noises). Leymann (1996) equated bullying to a situation of psychological terror in the workplace and argued that victims frequently experience PTS symptoms and even clinical forms of PTS. Although it may be questioned whether workplace bullying may be comparable to events commonly reported in association with PTS (e.g., a war situation in which the death of close others is witnessed), a traumatic experience can be defined as an event or situation that shatters individual's basic cognitive schemas about the world, other

people, and the self (Janoff-Bulman, 1992), which being the target of workplace bullying may have the potential to disrupt (see Mikkelsen & Einarsen, 2002; Nielsen et al. 2008).

Indeed, shattered assumption theory (Janoff-Bulman, 1992) defines trauma as an event or situation that disrupts an individual's beliefs of the world as benevolent and meaningful and of the self as worthy (see Schuler & Boals, 2016). As far as the event or the situation provides information that is incongruent with such basic assumptions, it may constitute a trauma leading to PTS symptoms of varying intensity (Janoff-Bulman, 1992). In the case of bullying, the repeated negative behaviors (e.g., verbal mistreatment, isolation) victims are subjected to, along with the lack of social support that they frequently experience, may significantly threaten their deeply held beliefs of a benevolent world. Additionally, the true reasons for why bullying is carried out are sometimes not clear to the victims – especially in the initial stages of bullying or when bullying is fueled by irrational motives (e.g., envy and threatened self-esteem of the perpetrator – see Zapf & Einarsen, 2020), which might challenge the victims' belief of a meaningful world. Finally, being subtracted areas of responsibilities or even accused of being an inefficient worker – which may occur in bullying situations – may significantly impinge on an individual's belief of being a worthy person.

In line with this, research has documented that verbal aggression – which is typical in workplace bullying – may be more impactful on PTS symptoms than physical aggression (Walsh & Clark, 2003). Similarly, it was reported (Rosen & Lilienfeld, 2008) that significant PTS symptoms may even follow exposure to events that do not typically involve extreme fear and horror such as employment stressors, loss of farm animals, and watching frightening Halloween television programs. More recently, it was shown (Hyland et al., 2021) that psychologically threatening events such as emotional abuse and school bullying, which “are not conventionally classified as traumatic” (p. 134), were uniquely associated with clinically significant PTS symptoms. In a similar vein, it was found (Nadale, 2018) that micro-aggressions, defined as subtle verbal and behavioral manifestations of bias, by

communicating a spectrum of negative messages to the target, can elicit full PTSD symptomatology. It should be noted also that even subthreshold manifestations of PTS, also referred to as partial PTSD or subsyndromal PTSD in the literature, might be associated with significantly high levels of distress and impairment (e.g., impairment in social and family functioning), work-loss days, suicidal ideation, alcohol use, anger and aggression, that require attention and intervention, suggesting that dimensional (vs. diagnostic) approaches to PTS are warranted (see Bergman et al., 2015; Cukor et al., 2010; Sareen, 2014). Additionally, employee traumatic distress can affect coworkers and family members via contagion processes (see Kensbock et al., 2022). For example, a recent study (Wang et al., 2023) found that the relationship between employee PTSD/distress and spouse PTSD/distress is as strong as the relationship between employee exposure to traumatic experiences and employee PTSD/distress. This suggests that employee PTSD/distress is as stressful for partners as it is for the employees directly exposed to the traumatic experiences.

In a meta-analytic review on outcomes of bullying, Nielsen and Einarsen (2012) documented that, among the various psychological and health-related outcomes considered, bullying showed the strongest association with post-traumatic stress symptoms. In a subsequent review (Nielsen et al., 2015), a meta-analytic correlation of $r = .44$ was found between exposure to bullying at work and an overall measure of PTS symptomatology. However, several clinical samples of victims were also included, that is, workers who sought clinical treatment for bullying-related disorders (e.g., Balducci et al., 2009; Leymann & Gustaffson, 1996), suggesting a likely overrepresentation of very extreme cases of bullying. Additionally, all the studies reviewed adopted a cross-sectional and between-person design, which is particularly vulnerable to between-person differences in factors (e.g., personality, concurrent traumas, demographic factors such as gender) that may act as significant third variables. Nielsen et al. (2015) recommended the use of more sophisticated research designs

and methodology to further corroborate the relationship between bullying and PTS symptoms and diagnosis.

Here, based on the above literature and particularly on recent discoveries on psychologically threatening experiences and PTS (e.g., Nadal, 2018), and on evidence suggesting that usually symptoms peak in the immediate aftermath of an emotionally damaging experience and then diminish over time (see Sareen, 2014), we contend that even short-term exposure to bullying behaviors – such as when the time window considered is a working week –, may already have an important psychological impact, as indicated by the related increase of PTS symptoms. This is because even single bullying behaviors can communicate to the target discrimination and marginalization that, according to recent findings and theorization (Nadal, 2018) and past clinical observations (Ravin & Boal, 1989; Rosen & Lilienfeld, 2008), may initiate the process of trauma development. Originally, by following a sample of workers for six consecutive working weeks, we better approximate the day-to-day lived experiences of targets of bullying behaviors, thus reducing retrospective biases that plague classical (e.g., cross-sectional) research designs in the field (see Gabriel et al., 2019), and focus on the intra-individual relationship between bullying behavior and PTS symptomatology, which has been ignored so far and is not confounded by between-person (i.e., inter-individual) differences (see Ilies et al., 2016). Thus, our first hypothesis reads:

Hypothesis 1: Exposure to bullying behaviors during the working week is significantly related to the experience of PTS symptoms at the within-individual level. In other words, in weeks in which the employee will experience more bullying behaviors, he or she will also report more PTS symptomatology.

Workplace phobia as an intervening factor

As a second aim of the study, we also explored a psychological mechanism that may consolidate (i.e., contribute to explain) the link between exposure to bullying behaviors and PTS symptoms. To this end, we focus on workplace phobia, which may be defined as a severe

form of work-related anxiety characterized by a classical phobic reaction to stimuli related to the workplace (Muschalla, 2009; Muschalla & Linden, 2013). Workplace phobia manifests as a panic state associated with significant physiological arousal that occurs when an individual thinks about or approaches the workplace. The person shows avoidance towards the workplace and reports intensive psychological suffering. In a study by Haines et al. (2002), workplace phobics were compared with individuals with work-related stress and individuals who were neither stressed nor presented workplace phobia. The study found that the workplace phobics differed from the other groups in terms of an elevated heart rate response and subjective reports of fear, supporting the idea that workplace phobia is a specific psychological problem and that its central psychological dimension is the experience of fear in relation to the workplace.

Although most studies on workplace phobia have focused on its clinical characterization and diagnosis (see Muschalla & Linden, 2014), it has been acknowledged that this psychological reaction may develop in response to traumatic or very stressful work experiences involving heightened psychophysiological arousal. Since bullying is an extreme social stressor with traumatic potential, leading to significant physiological responses (Hansen et al, 2006), we argue that individuals exposed to bullying behaviors report high levels of anxiety, including the experience of intensive fear that initiates a phobic reaction towards the perpetrators (i.e., colleagues or the supervisor) and more in general the workplace. This is in line with Leymann (1996), who defined bullying as psychological terror in the workplace, implying that victims' fear reactions are common and frequent and play a crucial role in the understanding of the consequences of bullying.

Workplace phobia may also exert a functional role in case of exposure to negative acts at work, since – as theorized by learning and reinforcement scholars (e.g., Skinner, 1969) – it may lead to behaviors (i.e., avoidance) that at least in the short term allow the target to stay away from experiences that are painful and undesirable. At the same time, however,

workplace phobia may fuel more complex and debilitating psychological symptoms, since phobic anxiety and behavior may exceed the workplace and affect other domains of life, as it typically occurs in individuals with PTS symptoms. The experience of extreme fear is also central to PTSD (WHO, 2022) and fear generalization has been regarded as a key mechanism in PTSD (Dunsmoor & Paz, 2015), suggesting that the psychological terror generated by the experience of bullying behaviors may first manifest as a fear reaction associated with the workplace (i.e., workplace phobia) and then take the form of a more debilitating symptomatology (i.e., PTS) that may transcend the work context. Thus, workplace phobia may represent a link in the chain connecting the experience of bullying behaviors to PTS symptomatology. Empirically establishing such a link is critical to shed light on the process through which bullying might lead to PTS symptomatology, which is the typical reaction to bullying (Nielsen & Einarsen, 2012), further reinforcing such a link from a conceptual and theoretical perspective. In light of the above, we formulate the second hypothesis as follows:

Hypothesis 2: The experience of workplace phobia mediates the relationship between exposure to bullying behaviors during the working week and the PTS symptomatology reported in the same week at the within-individual level.

Exploring person-level moderators of the postulated within-individual relationships

We also reasoned that PTS symptoms may, at least partly, be explained by some vulnerability factors, among which two well-established ones are having experienced a recent traumatic life event (death of a close family member, divorce, etc.) and female gender (see Sareen, 2014). The experience of a recent traumatic life event may sensitize the individual towards fear reactions. The increased likelihood of psychopathological responses associated with an elevated exposure to stressors has been previously observed across different traumatic events (see McLaughlin et al., 2022). Furthermore, exposure to multiple traumas tend to be a quite common occurrence (Benjet et al., 2016; Kilpatrick et al., 2013), making the investigation of whether the relationship between exposure to bullying behaviors and

psychological outcomes is magnified by a recent traumatic event of practical relevance. According to the stress sensitization hypothesis (Stroud, 2020), previous exposure to adverse events or circumstances might act as a vulnerability factor by increasing the risk that psychological problems (e.g., anxiety, depression, PTSD) develop following exposure to other stressful events or situations at a later point in time. According to Miloyan et al. (2018), this occurs as adverse events might fuel persistent vulnerability cognitions such as ‘this event has made me more vulnerable to future adversity’; or ‘I have realized as a result of this event exactly how vulnerable I am’. In line with this, adverse events have also been linked to an increase in the use of maladaptive emotion regulation strategies such as rumination and suppression (e.g., Michl et al., 2013). Therefore, it is highly likely that, when a vulnerable individual experiences bullying behaviors at work, which has in itself a traumatic potential, his/her sense of vulnerability is significantly accentuated. Based on our conceptual model (Figure 1), this would lead to more work-related fear reactions (i.e., workplace phobia) and, in turn, to heightened PTS symptomatology.

Regarding gender, research has found that the prevalence of PTSD in women is approximately twice than that found in men; additionally, women tend to report more severe and chronic PTSD symptomatology than men (see Christiansen & Berke, 2020). Such a higher vulnerability of females to PTS and, more in general, to anxiety-related conditions has been explained in different ways, including gender differences in primary appraisal, with females reporting more frequently threat and loss appraisals than males, leading to greater psychopathology, including higher rates of affective disorders (Olf et al., 2007). It has also been argued that such differences might contribute to differentiated hypothalamic-pituitary-adrenal (HPA) responses to psychosocial stressors in males and females, with more accentuated responses in the latter (Olf et al., 2007). Similarly, clear differences between males and females have been found also in a range of ‘situational’ phobias (e.g., Fredrikson et al., 1996), suggesting that this may happen also for workplace phobia – i.e., the crucial

intervening variable considered in the present study. Interestingly, research has documented that anxious women and men also differ in the situations they fear, with women reporting greater fears related to authority and work-related situations than men (Xu et al., 2012). Thus, females facing bullying behaviors may appraise the situation as more threatening and react with more work-related fear, which manifests at first as an accentuated phobic reaction towards the workplace – i.e., an aversive urge to get out of the situation – and then, via the generalization of fear, as PTS symptomatology.

Although such between-person characteristics (i.e., the experience of a recent traumatic life event and gender) cannot confound the within-individual relationships under scrutiny in the present study (i.e., experienced bullying behaviors>workplace phobia>PTS symptoms) (see Ilies et al., 2010), it is theoretically relevant to assess whether they may act as cross-level moderating factors. Thus, we expected that, for vulnerable individuals (i.e., females and those who had experienced a recent traumatic life event), the within-person process linking undergoing bullying behaviors with PTS symptoms will be particularly accentuated, leading to higher levels of workplace phobia and, through this, to more PTS symptomatology. Finding support for these additional hypotheses would help identifying subgroups of workers for whom the short-term health impairment process activated by the exposure to bullying behaviors and manifesting in terms of workplace phobia and PTS symptoms is more severe. This may inform the development of more effective preventive and supportive interventions. Therefore, the third hypothesis reads as follows:

Hypothesis 3: The within-individual relationship between exposure to bullying behaviors and PTS symptoms through workplace phobia is accentuated for individuals having experienced a traumatic life event in the last 12 months (3a) and for females (3b).

Figure 1 reports the main conceptual model underlying the study. Although we were mainly interested in the within-individual relationships and cross-level moderations as postulated by the model, we also examined whether parallel between-individual relationships

and moderations were supported by the data, which would replicate previous research on the link between the experience of bullying behaviors and PTS symptoms (see Balducci et al., 2011) and provide evidence for a homologous model operating at different levels of analysis.

(Figure 1 about here)

Temporal processes

As argued above, our model predicts that reactions to weekly bullying behaviors are stronger when proximal to the experience of the negative acts (i.e., same week). This is in line with previous findings (Rodríguez-Muñoz et al., 2020), showing that the trajectory of psychological symptoms (i.e., anxiety and depression) across a four-week period was very similar to the trajectory of exposure to bullying behaviors. Such results are compatible with what has been termed the ‘stress reaction model’ (see Zapf et al., 1996), according to which a stressor engenders more psychological dysfunction with exposure time, while an improvement in psychological functioning occurs when the stressor is removed. However, this is not against the possibility that the negative behaviors experienced in a given week might continue to influence individual well-being also later (e.g., the following week), although such a later influence can be assumed to be of a lower magnitude.

The lagged effect of bullying behaviors may be explained by their particularly severe nature, which is thought to cause more accentuated and lasting consequences than those ensuing from common job stressors (e.g., high workload; Zapf & Einarsen, 2005). Additionally, such a lagged impact may be explained by the perseverative cognition hypothesis (Brosschot et al., 2010), which suggests that the mental representation of a stressor experienced may remain active – either consciously or unconsciously – in the memory of the target and lead to persistent worries and ruminations that exceed the existence of the stressor itself; in this way, the physiological reactivity associated to the stress response is prolonged, therefore adding to the total amount of time a stressor affects well-being. To note, persistent arousal following a stressor is typical in the case of emotionally damaging experiences (see

Brewin & Ehlers, 2020). Thus, to shed an even more dynamic light on the investigated relationships and assess the existence of theoretically relevant temporal processes, we also examined whether the impact of experiencing bullying behaviors in one week carries over, in terms of the investigated health implications, to the next week. Building on our model (see Figure 1), we expected that being the target of bullying behaviors in one week would not only be related to workplace phobia and PTS symptoms in the same week, but also to the same outcomes in the following week. In particular, we expected such a carry-over effect to be particularly visible in relation to the more proximal outcome of exposure to bullying behaviors, that is, workplace phobia.

A previous study on day-level exposure to bullying behaviors (Hoprekstad et al., 2019) found that these related positively to depressed mood reported up to the two following days, as well as to concurrent depressed mood. This suggests that a proportionally similar carry-over effect may be observed when the time window considered regards a longer exposure period, that is, one week.

Thus, we expected that exposure to bullying behaviors in a given week continues to fuel workplace phobia and PTS symptoms in the following week, over and above the concurrent exposure to negative behaviors and the baseline weekly level of the target variable.

Hypothesis 4: Exposure to bullying behaviors during the working week is positively related, at the within-individual level, to the experience of a) PTS symptoms and b) and workplace phobia as reported the following week.

Method

Participants and procedure

The present study was conducted in 2018-2019 and included individuals employed in different organizations, consisting mainly of small social cooperative organizations based in

Italy. The organizations were contacted by members of the research team, who asked permission to collect data as part of empirical projects on which a number of master's degree theses was based. Participation was voluntary and anonymous. Data collection was carried out electronically via the web platform Qualtrics and consisted of the administration of a preliminary questionnaire and six weekly diary surveys. With the preliminary questionnaire, we derived a socio-demographic and occupational profile of the participants and collected information on several potentially relevant person-level psychological and work-related variables. With the diary surveys we collected data on the main (time-varying) study variables (see below). Of the 213 participants initially recruited, 55 were excluded as they answered to less than three weekly surveys. Subsequently, we excluded single weekly surveys with missing responses on one or more of the study variables included in the main analysis. Because data were collected online, we were able to also exclude responses that were not given at the expected time (for example, two questionnaires filled in on the same day). This exclusion procedure resulted in a final sample of 158 employees, who provided a total of 860 weekly observations, with a mean of 5.44 observations per participant ($SD = 1.00$). This sample consisted mainly of women (60.1%) and had a mean age of 36.76 years ($SD = 11.95$). Participants worked 36.23 hours per week ($SD = 9.76$) on average and held jobs mainly requiring direct contact with customers/clients (75.9%). Due to the sensitive nature of the survey content, no additional sociodemographic characteristics were investigated. All participants signed an online informed consent form before starting the study, which was approved by the Ethics Committee of the University of Bologna.

The preliminary questionnaire was filled in by the participants a week before the start of data collection at the weekly level. The weekly surveys were filled in each Monday for six consecutive working weeks. Each weekly survey collected information regarding the previous week. The links to the different surveys were sent to the participants' e-mails. To preserve anonymity, each weekly survey included the same anonymous code that was created based on

factual personal information. At the end of the diary study, this anonymous code was used to link all the data obtained in the six weekly surveys for each individual participant.

Measures

Preliminary questionnaire (person-level measures). With the preliminary questionnaire, we investigated socio-demographic and occupational characteristics and whether the participant recently experienced a traumatic life event. Additionally, we measured the person-level experience of workplace bullying, workplace phobia and PTS symptomatology as described below.

Experience of workplace bullying was measured with the Italian version (Balducci et al., 2010) of the Short Negative Acts Questionnaire (S-NAQ – Notelaers et al., 2019). The S-NAQ is an instrument based on the ‘behavioural experience method’ (Nielsen et al., 2020) and consists of nine items exploring how often the respondents have been subjected to a number of negative behaviors at work in the last six months (e.g., “Persistent criticism of your work and effort” and “Spreading of gossip and rumors about you”), with responses varying from 1 (“Never”) to 5 (“Daily”). As the scale probes closely correlated forms of bullying, it can be used as a single indicator of exposure to the phenomenon. In the present study, the S-NAQ’s Cronbach’s alpha was .83. In addition to the S-NAQ, we employed the ‘self-labelling approach’ (see Nielsen et al., 2020), by asking participants whether they have been subjected to bullying at work in the last six months based on a standard definition of bullying. The response options for this item varied between 1 (No) to 5 (Almost daily). We dichotomized the participants’ responses to the self-labelling item by contrasting those answering “No” with all the others, differentiating participants who didn’t *perceive themselves* as victim of bullying from the others.

Workplace phobia was measured with the Italian version (Vignoli et al., 2017) of the Workplace Phobia Scale (WPS; Muschalla & Linden, 2008; 2009), which includes 12 of the 13 items composing the original scale (e.g., “I feel uneasy and tense when I think about my

workplace” and “When I imagine having to pass a complete working day at this workplace, I get feelings of panic”). Response options ranged from 1 (“I disagree completely”) to 5 (“I agree completely”). Cronbach’s alpha was .92.

Symptoms of PTS were measured using a validated brief version of the PTSD Checklist-civilian scale (PCL-C; Lang & Stein, 2005). This version includes four items investigating the experience, during the last month, of hallmark symptoms of PTSD (i.e., re-experiencing [2 items], avoidance [1 item], and elevated arousal [1 item]). Item examples are: “I had repeated, disturbing memories, thoughts or images of a stressful situation experienced” and “I was superalert, or watchful or on guard”. Importantly, neither the opening statement introducing the items nor the specific items referred to the bullying behaviors investigated in a previous section of the preliminary survey. Responses were collected on a scale varying from 1 (“Not at all”) to 5 (“Extremely”). Cronbach’s alpha was .81.

Although we did not use the above person-level measures in the main analyses (i.e., hypothesis testing), we checked for whether the corresponding weekly-level measures described below, as averaged across the six weeks of observation, correlated significantly with them (see below).

Additionally, to assess participants’ exposure to recent traumatic events or situations other than bullying, we asked them whether in the last 12 months they experienced any of a number of traumatic events (e.g., death of the spouse or other family members, diagnosis of a severe personal illness, divorce) scoring higher than 50 on the Social Readjustment Rating Scale (Holmes & Rahe, 1967). The response to this single-item question was dichotomous (Yes vs. No).

Weekly diary surveys. Weekly-level measures were collected on the Monday of each week: therefore, for all scales items were anchored to the previous week. The experience of bullying behaviors was measured by administering six of the nine items of the Short Negative Acts Questionnaire (S-NAQ – see above) focusing on work-related and personal negative acts

(“Spreading of gossip and rumors about you”). Response options ranged from 1 (“Never”) to 5 (“Always/Every day”). Composite reliability estimated according to Geldhof et al. (2014) was suboptimal at the within level ($\omega_w = .59$) against the commonly accepted threshold of .70, while it was good at the between level ($\omega_b = .92$). Such a lower level of ω_w was not unexpected. Indeed, a previous diary study on bullying (Hoprekstad et al., 2019) found a value of .44 for a similar measure based on the S-NAQ. The authors argued that, in the case of short observation periods (e.g., ‘today’ or ‘the last week’) such as in diary studies, negative acts may not strictly co-occur together as it may more easily happen with longer observation periods (e.g., ‘the last six months’). This may lead to lower covariance between the negative behaviors, reducing reliability indices. In our case, based on recent recommendations (Yang et al., 2022), according to which multilevel reliability values in the range .50 - .70 may still be acceptable for studies focusing on within- and between- person variations, and on the results of the confirmatory factor analysis (reported below), we considered the obtained value as sufficient for supporting the within-level reliability of the measured construct. The six items showed intraclass correlation coefficients (ICC) ranging from .38 to .57, suggesting that there was adequate variation at the between (person, or level 2) and within (week, or level 1) levels. The obtained scale, as averaged across the six weeks of observation, showed a strong correlation with the corresponding person-level measures of bullying collected via the preliminary questionnaire (i.e., .67 with the S-NAQ and .44 with the self-labelling item).

Weekly workplace phobia was measured by using three items from the Workplace Phobia Scale (WPS – see above). We employed the three items (e.g., “I felt uneasy and tense when I thought about my workplace”) with the strongest loadings ($>.80$) on the underlying factor based on previous analyses we performed on a separate dataset, and that could comfortably be adapted at the weekly level. Response options ranged from 1 (I disagree completely) to 5 (I agree completely). Composite reliability values were the following : $\omega_w = .77$; $\omega_b = .97$. The three items showed ICCs ranging from .64 to .70, suggesting adequate

variation at both levels of analysis. The scale, as averaged across the six weeks of observation, correlated .65 with the corresponding person-level WPS collected via the preliminary questionnaire.

Weekly symptoms of PTS were measured using the four items of the PTSD Checklist-civilian scale (PCL-C – see above) that were adapted to fit the weekly level format (e.g., “I had repeated, disturbing memories, thoughts or images of a stressful situation experienced”). The items did not refer to the bullying behaviors investigated in a previous section of the weekly survey. As in the person-level version of the PCL-C scale, responses to each item varied from 1 (Not at all) to 5 (Extremely). Composite reliability was adequate ($\omega_w = .75$; $\omega_b = .92$). The four items presented ICCs ranging from .39 to .57. The average of the six weekly PCL-C scores correlated .47 with the corresponding person-level version of the scale, indicating a moderately high convergence between the measures.

Analytic strategy

Each participant provided data at both the person level (between-person or level 2) and the weekly level (within-person or level 1), with level 1 data being nested within level 2 data. Thus, the structure of the dataset required the adoption of multilevel analysis (Hox, 2010), which we implemented using SPSS 28. Before conducting the analyses, we restructured the dataset in a “long” format to make it suitable for multilevel analysis. We then conducted two main analyses, each of which included a series of hierarchical models through which we established whether the conditions for mediation and moderated mediation were met. The first analysis targeted weekly PTS symptomatology as dependent variable, while the second analysis targeted weekly workplace phobia. In addition to the main predictors related to the tested hypotheses, we included age in all the models since the latter may affect the onset and manifestations of different anxiety-related symptoms and disorders (e.g., Brenes, 2006; Gold et al., 2020), including PTS symptoms (e.g., Maercker, 2021) and different types of phobias (e.g., Fredrikson et al., 1996), thus potentially impacting results at level 2. Before performing

the analyses, we centered the level 1 predictors at the person mean (i.e., group mean centering), while level 2 predictors were centered at the sample mean unless otherwise specified (see below). Subsequently, to formally test for the hypothesised mediation and moderated mediation (hypotheses 2 and 3), we used the SPSS macro MLmed (Hayes & Rockwood, 2020; Rockwood, 2017). With MLmed indirect effects at the between- and within-level can be simultaneously estimated when – as in our case – the independent variable, the mediator and the dependent variable all have variability at the within-person and between-person levels, identifying what has been termed a 1-1-1 model (see Preacher et al., 2011). The details of this approach can be found in Zhang et al. (2009). MLmed specifically provides a Z-test for the significance of the indirect effect of interest by means of Montecarlo (MC) confidence intervals. The index of moderated mediation (see Hayes, 2015) is also included in the output for models involving level-2 moderators of the indirect effects (see Hayes & Rockwood, 2020), as in our case.

To test for Hypotheses 4 regarding the lagged impact of exposure to bullying behaviors, we first created a lagged version of the centered, week-level variables (i.e., week-level bullying behaviors, PTS symptoms, and workplace phobia) by using a specific syntax command available in SPSS. The creation of first-order lagged variables led to a significant reduction of the available observations for the analysis (from N=860, to N=669), mainly related to what has been termed essential missingness (Wickham & Knee, 2013). Subsequently, we fitted two hierarchical multilevel models testing the hypotheses regarding the impact of the lagged variables on PTS symptoms and workplace phobia.

Before testing the study hypotheses, we conducted descriptive statistics with SPSS and a series of multilevel confirmatory factor analyses (CFA) models with Mplus 8.7. The latter analyses aimed at ascertaining whether the six-item weekly measure of bullying behaviors conformed adequately to a 1-factor model and whether the three weekly level measures (i.e., bullying behaviors, workplace phobia, and PTSD symptoms) could be distinguished

empirically. The data and the syntax of the main analyses are available as supplementary material.

Results

Preliminary analyses

A multilevel confirmatory factor analysis (MCFA) conducted on the weekly measure of bullying behaviors showed that the six selected items fit sufficiently well with a one-factor solution ($\chi^2(18) = 65.54$, $p < .001$; CFI=.91; TLI=.85; RMSEA=.054; SRMR_{within}=.048; SRMR_{between}=.049). The fit improved by freeing the between error covariance between two items tapping work-related negative acts ($\chi^2(17) = 48.48$, $p < .01$; CFI=.94; TLI=.89; RMSEA=.046; SRMR_{within}=.048; SRMR_{between}=.048). Standardised factor loadings for the latter solution varied between .31 and .61 at the within-level and between .63 and .91 at the between-level.¹ In a second MCFA, we fitted a three-factor solution to the weekly measures of bullying behaviors, workplace phobia and PTSD symptoms to check whether the three measures could be discriminated empirically. The results supported an adequate fit for the hypothesized three-factor solution: ($\chi^2(125) = 258.88$, $p < .001$; CFI=.94; TLI=.93; RMSEA=.035; SRMR_{within}=.046; SRMR_{between}=.076). The three-factor solution fitted better than a one-factor solution wherein all the items loaded on the same underlying factor ($\Delta\chi^2(6) = 884.67$, $p < .001$) and a two-factor solution wherein the items of workplace phobia and PTSD symptoms were considered manifestations of the same underlying factor ($\Delta\chi^2(4) = 506.71$, $p < .001$).

Table 1 reports descriptive statistics and correlations between the study variables. At the within level, exposure to bullying behaviors was more strongly related to workplace

¹ The fit of the model could be even further improved by freeing another between error covariance regarding a different couple of items tapping work-related negative acts: ($\chi^2(16) = 37.65$, $p < .01$; CFI=.96; TLI=.92; RMSEA=.040; SRMR_{within}=.048; SRMR_{between}=.031).

phobia (.23) than to PTSD symptoms (.09). The pattern was the same at the between level, although at this level the correlations were stronger.

(Table 1 about here)

Hypotheses testing

Table 2 shows the results of a series of multilevel (ML) regression analyses with weekly PTS symptoms acting as dependent variable. In Model 1, compared to the Null model, we allowed correlated residuals at level 1 (see Heck et al., 2022; Hox, 2010), which improved model fit significantly (Δ -2loglikelihood (1) = 22.03, $p < .001$)². Hypothesis 1 (i.e., the within-person relationship between the weekly measure of bullying behaviors and PTS symptoms) was tested in Model 2, which considered the main predictor ‘Bullying behaviors (week)’ and a series of level 2 (L2) predictors including ‘Bullying behaviors (week) means’ (i.e., the between-person version of the L1 predictor) and gender, age, and whether the participant experienced a traumatic life event in the last 12 months.³ As can be seen from Table 2 (Model 2) ‘Bullying behaviors (week)’ was significantly and positively related with weekly PTS symptoms ($b=0.17$, $SE= 0.08$, $p<.05$), which provided support for Hypothesis 1. Table 2 additionally shows that when ‘Workplace phobia (week)’ was included in the regression equation (Model 3), it showed a statistically significant relationship with weekly PTS symptoms ($b=0.25$, $SE= 0.04$, $p<.001$). In the same model (Model 3), the relationship between ‘Bullying behaviors (week)’ and the target variable became non-significant.

(Table 2 about here)

Table 3 reports the results of a second series of ML regression analyses targeting weekly workplace phobia symptoms. Model 2 shows that ‘Bullying behaviors (week)’ was positively and significantly related to weekly workplace phobia ($b=0.42$, $SE= 0.07$, $p<.001$),

² We used the matrix ‘AR1’ as a level 1 residual structure. This is a first-order autoregressive matrix with homogenous variances. The correlation between any two elements is equal to rho for adjacent elements, rho² for elements that are separated by a third, and so on.

³ Although the between variables could not confound the investigated within-person relationship, we included them to have the same covariates used also in the subsequent models (see below).

indicating that the independent variable of the postulated model was related to the mediator in the expected direction. Additionally, when we included a random slope of ‘Bullying behaviors (week)’ (see Table 3, Model 3), the model improved and showed a significant slope variance. We then included the two interactions ‘Bullying behaviors (week) x Traumatic event’ and ‘Bullying behaviors (week) means x Traumatic event’ (Table 3, Model 4), that is, the cross-level and same-level interactions involving the experience of bullying behaviors and a recent traumatic life event, and found that both were positive and statistically significant ($b=0.58$, $SE=0.28$, $p<.05$; and $b=0.86$, $SE=0.38$, $p<.05$). This suggested that reporting a recent traumatic life event strengthened the within- and between-individual relationships between the experience of bullying behaviors at work and workplace phobia. Figure 2 reports the plot of the cross-level interaction. Simple slope analysis revealed that the within-person relationship between the experience of bullying behaviors and workplace phobia was positive and significant for participants who did not experience a traumatic life event in the last 12 months ($b=0.35$, $SE=0.12$, $p<.01$) and for those who did experience the event ($b=1.02$, $SE=0.25$, $p<.001$). However, as shown in Figure 2, in the latter case the relationship was stronger.⁴

(Table 3 and Figure 2 about here)

We then examined the two interactions ‘Bullying behaviors (week) x Gender’ and ‘Bullying behaviors (week) means x Gender’ (Table 3, Model 5) and found that only the latter was statistically significant ($b=0.61$, $SE=0.26$, $p<.05$), suggesting that, at the between-person level, female gender strengthened the relationship between the experience of bullying behaviors, as averaged across the six observed weeks, and the outcome variable. Simple slope

⁴ We do not report simple slope analysis and graphical representation of the same-level (i.e., between) version of the interaction, since they mirrored the results obtained for the cross-level interaction.

analysis indicated that the relationship was significant for both males ($b=1.11$, $SE=0.14$, $p < .001$) and females ($b=1.73$, $SE=0.19$, $p < .001$), but for females it was stronger (see Figure 3).

(Figure 3 about here)

The above results are compatible with our hypotheses of mediation (Hypothesis 2) and, as far as the role of experiencing a recent traumatic life event is concerned, cross-level moderated mediation (Hypothesis 3a) – see Figure 1. We used MLmed to formally test the within-person mediation of weekly workplace phobia in the relationship between weekly bullying behaviors and weekly PTS symptoms. The hypothesized within-person indirect “effect” was statistically significant (estimate = 0.11, $SE=0.025$, $Z=4.45$, $p < .001$), with Montecarlo confidence intervals (MCCI) ranging from 0.067 to 0.166. This supported Hypothesis 2, with workplace phobia fully mediating the positive within-person relationship between experiencing bullying behaviors and PTS symptoms. The same mediation model was significant also at the between level (estimate = 0.57, $SE=0.095$, $Z=6.11$, $p < .001$, $MCCI=0.40-0.77$).

Additionally, the inclusion in MLmed of the between-person variable ‘traumatic life event’ as a moderator revealed a significant within-person moderated mediation (estimate = 0.17, $MCCI = 0.02-0.34$). The between-person moderated mediation was also significant (estimate = 0.39, $MCCI = 0.08-0.74$). These results supported Hypothesis 3a and provided evidence of a homologous model at the two (within and between) levels of analysis. On the contrary, the inclusion of gender as a moderator revealed that only the between-person index of moderated mediation was significant (estimate = 0.26, $MCCI = 0.05-0.50$). Thus, Hypothesis 3b was not supported.

Table 4 reports the results of the analyses testing Hypothesis 4 regarding the lagged impact of bullying behaviors. Symptoms of PTS were uniquely and negatively predicted, at the within level (see Model 2-a), by previous week-level PTS symptoms ($b = -0.33$, $SE=0.04$,

$p < .001$), indicating that the higher the previous week level of PTS, the lower the current week level of symptoms. Exposure to bullying behaviors in the previous week did not affect current week-level PTS symptoms ($b = 0.10$, $SE = 0.08$, ns). Regarding workplace phobia, Model 2-b (see Table 4) revealed that the negative behaviors experienced at week $t-1$ (i.e., the previous week) positively impacted current week workplace phobia ($b = 0.19$, $SE = 0.08$, $p < .05$) over and above the ‘impact’ of the negative behaviors experienced during the current week ($b = 0.50$, $SE = 0.08$, $p < .001$) and the previous week-level workplace phobia symptoms ($b = -0.36$, $SE = 0.04$, $p < .001$). This confirmed that the reactions to the experience of weekly bullying behaviors persist significantly over time and continue to negatively affect the mental health of the target. Such results did not support Hypothesis 4a, while they supported Hypothesis 4b. Additional analyses, not reported here, revealed that, when considering week $t-2$ exposure to bullying behaviors (i.e., the second order lagged variable), there was no impact on either current week workplace phobia or current week PTS symptoms.

Discussion

In line with a number of previous studies in the field (see Boudrias et al., 2021) and with the idea of bullying as a dynamic phenomenon (Einarsen, 2000), we found that the experience of negative acts at work fluctuates significantly from week to week, meaning that not all weeks are created equal as far as the experience of targets is concerned. Although most of the variance in the adopted weekly measure of exposure to bullying behaviors was at the between-person level, we found that more than 30% of the total variance was located at the *within* level, which is in line with previous evidence (Rodríguez-Muñoz et al., 2017) and the notion of bullying as a dynamic process, suggesting that fluctuations in exposure are substantial and cannot be ignored when it comes to gaining a more complete understanding of bullying and its consequences. Indeed, within-individual weekly or daily studies are considered essential for elucidating micro-processual aspects of stressor-strain relationships

that may unfold fully over longer periods of time, affecting between-individual differences in more distal outcomes such as full-blown psychological disorders (see Ilies et al., 2016).

Experiencing bullying behaviors and post-traumatic stress symptomatology

Supporting Hypothesis 1, we found that, in weeks where the exposure to workplace bullying behaviors was higher, the target reported more symptoms of PTS than in weeks with a lower exposure. This suggests that fluctuations in exposure to bullying behaviors are accompanied by parallel fluctuations in health and well-being indicators among targets, which further supports previous research in the field (e.g., Tuckey et al., 2014). So far, the link between bullying and PTS symptoms has been investigated only in between-person, cross-sectional studies (see Nielsen & Einarsen, 2015). Thus, with the present study we were able to demonstrate that such a link holds also at the within-person level (i.e., within the same individual across time), which strengthens the credibility and generalizability of the relationship between bullying and PTS symptomatology. The negative acts characterising bullying may be regarded as episodes of microaggression, with recent evidence increasingly documenting their profound consequences for the mental health of those exposed (Nadal, 2018), even though they do not conform to the events usually associated with PTS symptoms and disorder (Hyland et al., 2021). Such an effect can be understood through the lens of shattered assumptions theory (see Schuler & Boals, 2016). Indeed, being even “sometimes” in a week at the receiving end of bullying behaviors, such as “being withheld information that affects performance”, “persistent criticism of your work and effort”, or “being shouted at or being the target of spontaneous anger” – behaviors that in some weeks had a prevalence of 10-20% each among our participants – may convey to the targets information having the potential to destabilise their beliefs of a benevolent work environment and of themselves as worthy persons.

Notwithstanding this, we acknowledge that positive beliefs about the world and the self are unlikely to be shattered as a consequence of an exposure to bullying behaviors lasting

one week – which is not prolonged by definition and does not align with the notion of bullying usually adopted in between-person studies (see Einarsen et al., 2020). However, a weekly exposure may still be able to crucially impinge on such beliefs, cause significant emotional damage, and fuel subthreshold traumatic reactions among those exposed (e.g., flashbacks of the behaviors and being vigilant and alert at work). Such reactions may then be short-lived if the work situation normalizes, or rather consolidate if the situation worsens because of the negative acts becoming more frequent and/or persistent.

The present findings may shed some light on what occurs to the targets in the initial stages of a bullying situation when the hostile acts still have a relatively low frequency and are not persistent, and their consequences may be transient. Having found that even such an exposure is related to an identifiable PTS reaction, as assessed through a valid and reliable PTSD measurement tool further emphasizes the importance of acting soon against bullying. It is plausible that early situations occurring in the “grey zone”, defined by Leymann (1990) as the “critical incident phase” (Leymann, 1990), or in the early stage of bullying where attacks occur only “now and then” (Einarsen, 2000), are already psychologically detrimental for the target. From a psychopathological perspective, investigating subthreshold symptoms of PTS is not trivial, since these may already be associated with significant suffering and progress into the full-blown disorders with delayed manifestation. At the same time, subthreshold symptoms are more easily treatable (see McLaughlin et al., 2015). Additionally, PTS is significantly related with severe outcomes such as suicidal ideation and behaviour (Sareen, 2014) and suicidality has been found in association with workplace bullying (Conway et al., 2022), further suggesting the necessity of prompt action.

Workplace phobia as an intervening variable

Furthermore, in line with Hypothesis 2, we found that the experience of workplace phobia, a phobic anxiety reaction consisting of emotional arousal and avoidance behaviour that occur when thinking of or being confronted with the workplace (Muschalla & Linden,

2014), mediates the link between exposure to bullying behaviors and PTS symptomatology at the within-person level. We found strong within-person relationships both between the experience of bullying behaviors and workplace phobia and between workplace phobia and PTS symptoms, suggesting that workplace phobia may act as an important psychological mechanism linking bullying behaviors to PTS symptoms. Thus, workplace phobia may be an immediate, domain-specific manifestation of the fear fuelled by bullying behaviors, which may then exceed the workplace context and lead to generalized fear reactions and other symptoms such as those characterising PTS. These results are consistent with the view of bullying as a form of psychological terrorization, as originally introduced by Leymann (1990).

The present study sheds light not only on a mechanism related to the psychological consequences of bullying, but also on additional aspects that may be relevant for a better understanding of the phenomenon, such as its development over time. Indeed, phobic reactions may explain the link between experienced bullying behaviors and absenteeism (e.g., Burr et al., 2022), since absenteeism from work may be enacted as a way to cope with work-related anxiety and fear, as demonstrated in previous research showing that workplace phobia is related to objective absenteeism (Vignoli et al., 2017). Additionally, workplace phobia may be linked to a reduction in job performance or interpreted as intentional work-related withdrawal by the supervisor and colleagues of the target of bullying behaviors. This may lead them to be less sympathetic towards the target and consider the negative acts as justifiable or even deserved (see Ng et al., 2021, 2022).

The role of moderators

We also found, in line with Hypothesis 3a, that the experience of a recent traumatic event other than bullying (i.e., during the last 12 months) strengthened the within-person link between exposure to bullying behaviors and PTS symptoms through workplace phobia. This is plausible in light of the stress sensitization model (Stroud, 2020) and previous research on

PTS (Sayed et al., 2015), which found that traumatic stressors occurring before the more recent traumatic experience may amplify the post-traumatic reaction to the latter, thus acting as vulnerability factors. The convergence of our findings with such previous knowledge on PTS further increases the credibility of our results and the notion of bullying – even when exposure to negative acts is transient, as in our case – as an emotionally overwhelming experience having the potential of interacting with other traumatic stressors in exerting its impact on PTS.

To note, the same interaction between exposure to bullying behaviors and a recent traumatic experience was observed also at the between level (i.e., same-level interaction), indicating a homologous moderated mediation model at the within- and the between-person levels. The between-level model focused on differences between participants in their exposure to bullying behaviors across the six-week study period, meaning that it might have captured longer-term dynamics of exposure and their psychological correlates. On the contrary, the within-level model focused on transient exposure and its potential short-term implications for the ‘average individual’.

Previous research on bullying has mainly taken for granted that bullying operates similarly across-different levels of analysis and has used between-person findings to derive within-person explanations on the process of bullying and its consequences. The result that the moderated mediation model generalizes across levels thus provides direct empirical support to the assumed parallelism of between- and within-person explanations, attesting to the parsimony and breadth of the theoretical propositions linking bullying to PTS symptoms (see Chen et al., 2000). Additionally, these results may suggest that the transient weekly-level relationships between negative acts, workplace phobia and PTS symptoms, including the accentuating effect that a recent traumatic event may have on them, may consolidate over time, leading to the emergence of parallel relationships based on more stable between-individual differences (see Ilies et al., 2016). For example, the transient exposure to bullying

behaviors, if occurring repeatedly across weeks, may lead the exposed individuals, particularly the most vulnerable, to become a ‘victim’ of bullying with the associated consequences, including chronic workplace phobia and full-blown PTSD. Thus, short-term stressor-strain relationships and dynamics operating at the within level might contribute to explain longer-term relationships and dynamics that were observed previously at the between level (see, on this, Sonnentag & Fritz, 2015).

On the contrary, we did not support the hypothesized cross-level interaction between gender and exposure to bullying behaviors (Hypothesis 3b). The interaction emerged only at the same (i.e., between) level of analysis, indicating that it was especially for female participants that a higher average level of exposure to bullying behaviors across the study period was related to a higher average level of PTS symptoms via workplace phobia. This finding might suggest that the vulnerability related to female gender may emerge only in the case of more persistent exposure to bullying behaviors, as indicated in our study by a higher average level of bullying across the adopted observation period. To the contrary, at the within individual level (i.e., in the short term), the mediating path initiated by bullying behaviors seems to be equally strong in males and females, suggesting that males and females share a similar vulnerability to transient exposure to bullying behaviors.

Overall, the present findings partially support the notion of gendered mental health implications of experiencing workplace bullying behaviors. Previous research on the relationship between bullying and gender mainly focused on the differential exposure to bullying between males and females, with little evidence supporting a difference (see Escartin et al., 2020; Salin, 2018). More rarely, studies have focused on gender as a modifier of the bullying-outcomes relationship. For example, the meta-analytic model proposed by Nielsen and Einarsen (2012) on the consequences of bullying only considered personality and coping strategies as potential moderators of bullying. A more recent study (Rosander et al., 2020) failed to clearly support that gender matters as far as the mental health implications of

bullying are concerned. This relatively little research addressing the role of gender in relation to bullying is surprising. Indeed, there are well-established gender differences in the prevalence of mental disorders (including PTSD and different phobias) (Boyd et al., 2015), with female gender being a vulnerability factor. These differences have been explained by an accentuated response in females to various psychosocial stressors (see Olff et al., 2007), among which the experience of bullying behaviors is a relatively prevalent one.

Our results suggest that increased attention should be paid to the health and well-being of females exposed to persistent bullying behaviors. This may be realised, for example, through the development of targeted gender-sensitive interventions (see Greenwod, 2022; ILO, 2013) to deal with workplace bullying and mental health in organizations. These might include awareness raising and training initiatives and the provision of additional resources such as formal and informal support networks (e.g., peer groups) and psychological treatments. The stigma associated with bullying victimization (Leymann, 1996) and mental health conditions (Sickel et al., 2014), coupled with the lower power positions frequently held by females in organizations (see, e.g., Netchaeva et al., 2022), should also be considered in developing interventions. Further research on the gendered implications of experiencing bullying behaviors is warranted.

The impact of the passage of time

Partially in line with our fourth hypothesis (Hypothesis 4b), the temporal analysis demonstrated that the bullying behaviors experienced in a week have some implications also for mental health in the following week and more specifically for workplace phobia only, which according to our model is the outcome being more proximal to the adverse workplace experience (see Figure 1). Otherwise stated, the lagged impact of bullying behaviors does not extend beyond workplace phobia by reaching, at least directly, the more distal outcome examined (i.e., PTS symptoms). This finding is reasonable, since the lagged impact of bullying behaviors on workplace phobia was lower in magnitude than that observed for the

concurrent relationship, which may imply less potential for the work-related fear to generalize and lead to a more debilitating symptomatology (i.e., PTS). Interestingly, the findings also revealed that the level of PTS and workplace phobia symptoms reported in a week negatively impacted the same symptomatology (i.e., PTS and workplace phobia, respectively) experienced in the following week. Although there is still poor knowledge of the short-term course and dynamics of trauma-related reactions (see, e.g., Price et al., 2020), these findings might suggest that both types of symptoms reflected the temporary activation of the stress response (see Ilies et al., 2016) – i.e., an acute fear reaction – that, all other conditions remaining equal, was naturally linked to a marked reduction of the symptoms in the following week as a consequence of coping and recovery processes (Sareen, 2014).

Overall, on the one hand, our results support a carry-over effect on mental health due to experiencing bullying behaviors at work during a week, which is in line with a previous study adopting a design similar to the one we used here (Hoprekstad et al., 2019). On the other hand, our findings also point to an attenuation of the health impact of transient exposure to bullying behaviors as time goes by. This is in line with a previous study (Rodríguez-Muñoz et al., 2020), in which a close correspondence was found between the short-term trajectory of exposure to bullying acts and that of anxiety and depressive symptoms, and with previous evidence indicating that, at least as far as PTS is concerned, symptomatology is at its peak in the immediate aftermath of the emotionally adverse experience and then it tends to fade away (Saren, 2014).

Additionally, our findings seem to confirm the so-called stress-reaction model (Zapf et al., 1996), which describes the temporal relationship between stressors and strain, according to which exposure to a stressor leads to stress and psychological dysfunction as long as the stressor is present; once the stressor is removed, there is an immediate attenuation in symptomatology and an improvement in functioning. We emphasize, however, that such an attenuation in symptomatology may not occur if the negative behaviors, rather than being

transient, are reiterated week after week, in which case our results suggest an accumulation of the impact, at least as far as workplace phobia is concerned. This may mean that, over longer periods of time, persistent exposure to bullying behaviors may better conform to the so-called accumulation model (Frese & Zapf, 1988; Zapf et al., 1996), according to which the prolonged experience of stress resulting from bullying may lead to permanent psychological damage (see Leyman & Gustavsson, 1996) once a “psychological-biological breaking point” (Frese & Zapf, 1988, p. 390) is reached.

Study limitations

One of the main limitations of the present study is that it was based on a relatively small sample of workers (N=158) belonging to different occupations and sectors. Therefore, the generalizability of the findings might be limited and replications are warranted. However, we used a diary design and sample sizes as the present one are not uncommon for this type of studies (see Gabriel et al., 2019). Additionally, our main hypotheses were situated at the within-person level, for which the number of observations available was relatively high (n = 860).

A second limitation is that we did not support the impact of exposure to bullying behaviors on PTS symptomatology, but only establish that, within the same individual, a higher level of exposure to bullying behaviors co-occurred with higher levels of PTS symptoms during the same week. This is compatible with the idea that PTS reactions may be stronger immediately after the ‘traumatic experience’ – which aligns with findings from studies on PTSD (see Sareen, 2014) –, but we provided only cross-sectional evidence for the investigated stressor-strain relationship. When we ran lagged analysis, we could only demonstrate an impact of weekly exposure to bullying behaviors on workplace phobia symptoms. However, as it is well known (see Wickham & Knee, 2013), lagged analyses resulted in a substantial loss of observations, leading to lowered statistical power. Thus, given that the lagged impact of weekly bullying behaviors is presumably lower in size, we cannot

exclude that reduced statistical power might have affected the chance of detecting such a lagged effect on PTS. Future studies could either try to retest our model on a larger dataset, or perhaps use a more sophisticated diary design including the temporal ordering of the variables within the same week. This could be done, for example, by measuring exposure in the first part of the week and strain reactions in the second part of the same week. Yet, attrition should be considered as a potential threat when using more sophisticated intensive longitudinal designs, since adding weekly observations may cause a higher burden to participants and potential dropout as a result (Kirtley, 2022).

A further potential limitation is that the level of exposure to bullying behaviors was, on average, low among the recruited participants. On the one hand, this may constitute a threat to the construct validity of our predictor. On the other hand, bullying has been considered often a dimensional phenomenon and investigating the lower bound of the exposure continuum may lead to a better understanding of the initial phases of bullying, which tend to be the most widely prevalent (see Zapf et al., 2020). Additionally, the exposure levels found in our sample both for the weekly and the retrospective measures of experienced bullying acts were not, on average, very different from those observed in previous organizational studies adopting the same measure of bullying (see, e.g., Baillien et al., 2011; Balducci et al., 2020).

A further limitation is that the collected data were all self-reported. In future studies, an effort should be made to use multisource data, for example by asking also other informants about exposure to bullying behaviors among focal participants. However, this approach was used rarely in past research (Coyne et al., 2003) and it can be limited by a possible underestimation of the exposure, potentially reducing the level of both between- and within-person variance. Finally, we acknowledge that PTS symptoms may co-occur with other psychopathological dysfunctions, most notably depression (Qassem et al., 2021). Thus, future studies could further test the unique link between exposure to bullying behaviors and PTS

symptoms in intensive longitudinal studies controlling for depressive and anxiety symptomatology.

Practical implications

One implication of our study is that, also in the case of targets with a low exposure to bullying behaviors, it is critical to assess and monitor the evolution of subthreshold PTS symptoms and possibly treat them with appropriate interventions – including, for example, providing acceptance and support, empowerment, and voice (see SAMHSA, 2014) –, since the symptoms may already appear during the early stages of a potential bullying situation. Additionally, those with formal or informal power to intervene in a bullying conflict, such as bystanders (i.e., colleagues, the supervisor of the target, human resources managers, counsellors), should be educated to recognise the poor job performance possibly displayed by the target as a likely side effect of workplace phobia, rather than the main reason for why bullying is carried out. Such education efforts should reduce the temptation to blame the targets for their exposure to bullying behaviors and the risk of leaving them socially isolated at work, which is a quite frequent occurrence among targets (Ng et al., 2020).

A further implication is that organizational prevention should perhaps focus on *bullying behaviors*, independently of their frequency and duration. By considering only persistent and frequent negative acts in preventive training and interventions (e.g., organizational policy on bullying), managers and supervisors may run the risk of becoming more tolerant regarding subthreshold negative acts, which may already cause significant suffering and influence the trajectory of bullying over time (Conway et al., 2018). Another implication is that, among targets of bullying behaviors, special attention should be paid to those individuals with a recent history of traumatic life stressors and females, given their potentially higher risk of reporting workplace phobia and PTS symptoms when experiencing bullying behaviors – in the former case even after a limited (i.e., not persistent) exposure period. At the same time, however, professionals such as occupational psychologists and

physicians offering counselling to targets, should avoid mistaking individual vulnerability for the underlying cause of PTS in response to experiencing bullying behaviors, since the bullying behaviors-PTS relationship via workplace phobia was significant for both ‘vulnerable’ and ‘non-vulnerable’ workers. Considering such nuances could lead to showing a more sensitive approach towards targets.

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Table 1. Descriptive Statistics and Intercorrelations of Study Variables

	<i>M (SD)</i> ^a	ICC	%	1	2	3	4	5	6	7	8
1 Bullying behaviors (week)	1.34 (0.39)	0.68		1	.23***	.09**					
2 Workplace phobia (week)	1.80 (0.85)	0.74		.63***	1	.13**					
3 PTSD symptoms (week)	1.63 (0.66)	0.58		.61***	.71***	1					
4 Bullying behaviors (person) ^b	1.47 (0.48)			.67***	.47***	.43***	1				
5 Bullying (person, self-labelling) ^c			9.5	.44***	.32***	.29***	.51***	1			
6 Traumatic event in last 12 months ^c			16.5	-.01	.07	.13	.06	-.09	1		
7 Gender ^d			60.1	-.02	.12	.05	-.01	-.05	.08	1	
8 Age	36.65 (11.81)			-.09	-.08	-.09	-.05	-.08	.10	.04	1

Note. $N = 158$ (860 observations). ^aReported M , SD and correlations of weekly level variables (i.e., variables 1-3) have been computed by first averaging the variable scores across the available weeks. Level 1 (i.e., *within*) correlations are reported above the diagonal; Level 2 (i.e., *between*) correlations are reported below the diagonal. ^b This variable represents the score of the 9-item Short-Negative Acts Questionnaire obtained in the preliminary survey. ^c 0 = no, 1 = yes; ^d 0 = male, 1 = female. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2. Results of multilevel regression analysis predicting weekly PTS symptoms

	Null model	Model 1	Model 2	Model 3
	Estimate (<i>SE</i>)	Estimate (<i>SE</i>)	Estimate (<i>SE</i>)	Estimate (<i>SE</i>)
Intercept	1.63 (0.05)***	1.63 (0.05)***	1.65 (0.14) ***	1.65 (0.14)***
Bullying behaviors (week)			0.17 (0.08)*	0.06 (0.08)
Bullying behaviors (week) means ^a			1.03 (0.11)***	1.03 (0.11)***
Gender (female)			0.07 (0.08)	0.07 (0.08)
Age			-0.01 (0.01)	-0.01 (-0.01)
Traumatic event in last 12 months (yes)			0.26 (0.11)*	0.26 (0.11)*
Workplace phobia (week)				0.25 (0.04) ***
Within person (L1) variance	0.27	0.30	0.30	0.28
Rho		0.24	0.22	0.21
Intercept (L2) variance	0.38	0.35	0.19	0.19
-2 log likelihood (ML)	1662.27	1640.24	1556.50	1519.17
n. of estimated parameters	3	4	9	10
Δ -2 log lh (Δ n. estimated parameters)		22.03 (1)***	83.74 (5) ***	37.33 (1)***

Note. $N = 158$ (860 observations). ^a This variable is the average of the ‘Bullying behaviors (week)’ measures across the six weeks of the study. L1= level 1 (within). L2 = level 2 (between). ML = maximum likelihood. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3. Results of multilevel regression analysis predicting weekly workplace phobia symptoms

	Null model	Model 1	Model 2	Model 3	Model 4	Model 5
	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)	Estimate (SE)
Intercept	1.80 (0.07)***	1.80 (0.07)***	1.71 (0.26) ***	1.70 (0.26) ***	1.70 (0.26)***	1.70 (0.29)***
Bullying behaviors (week)			0.42 (0.07)***	0.44 (0.10)***	0.35 (0.11) **	0.35 (0.17)*
Bullying behaviors (week) means			1.39 (0.13)***	1.39 (0.13)***	1.27 (0.14)***	1.11 (0.17)***
Gender (female)			0.21 (0.10)*	0.22 (0.10)*	0.21 (0.10)*	0.21 (0.10)*
Age			-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Traumatic event in last 12 months (yes)			0.18 (0.14)	0.20 (0.14)	0.18 (0.14)	0.19 (0.14)
Bullying behaviors (week) x Traumatic event					0.58 (0.28) *	
Bullying behaviors (week) means x Traumatic event					0.86 (0.38) *	
Bullying behaviors (week) x Gender						0.14 (0.21)
Bullying behaviors (week) means x Gender						0.61 (0.26) *
Within person (L1) variance	0.24	0.27	0.25	0.22	0.21	0.21
Rho		0.27	0.26	0.21	0.20	0.20
Intercept (L2) variance	0.66	0.63	0.33	0.35	0.33	0.33
Slope (L2) variance				0.45	0.43	0.45
Intercepts/slope (L2) covariance				-0.07	-0.07	-0.06
-2 log likelihood (ML)	1638.60	1614.79	1488.89	1464.68	1454.77	1458.56
n. of estimated parameters	3	4	9	11	13	13
Δ -2 log lh (Δ n. estimated parameters)		23.81 (1)***	125.90 (5)***	24.21 (2)***	9.91 (2)**	6.12 (1)**

Note. $N = 158$ (860 observations). L1= level 1 (within). L2 = level 2 (between). ML = maximum likelihood estimation. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4. Results of lagged multilevel regression analysis predicting weekly PTS symptoms and weekly workplace phobia

	PTS symptoms (week)			Workplace phobia (week)		
	Null model-a	Model 1-a	Model 2-a	Null model-b	Model 1-b	Model 2-b
	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)
Intercept	1.62(0.05)***	1.75 (0.15) ***	1.75 (0.15) ***	1.76 (0.07)	1.75(0.18) ***	1.75(0.18) ***
Bullying behaviors (week)		0.10 (0.08)	0.14 (0.08)		0.44 (0.07) ***	0.50 (0.08)***
Bullying behaviors (week) means		1.01 (0.12)***	1.01 (0.12)***		1.34 (0.14)***	1.34 (0.13)***
Gender (female)		0.04 (0.09)	0.04 (0.09)		0.18 (0.11)	0.18 (0.11)
Age		-0.01 (0.01)	-0.01 (0.01)		-0.01 (0.01)	-0.01 (0.01)
Traumatic event in last 12 months		0.31 (0.12)*	0.31 (0.12)*		0.21 (0.14)	0.21 (0.14)
PTS symptoms (week <i>t</i> -1)		-0.32 (0.04) ***	-0.33 (0.04) ***			
Workplace phobia (week <i>t</i> -1)					-0.32 (0.04)	-0.36 (0.04)***
Bullying behaviors (week <i>t</i> -1)			0.10 (0.08)			0.19 (0.08)*
Within person (L1) variance	0.38	0.50	0.50	0.22	0.41	0.46
Rho	0.52	0.70	0.70	0.16	0.65	0.69
Intercept (L2) variance	0.27	0.00	0.00	0.65	0.18	0.13
-2 log likelihood (ML)	1235.22	1099.78	1098.28	1249.94	1107.57	1101.29
n. of parameters	4	10	11	4	10	11
Δ -2 log lh (Δ n. of parameters)		135.44 (6)***	1.50(1)		142.37 (6)***	6.28 (1)*

Note. *N* = 158 for a total of 669 observations Gender was not centered (0=women; 1=men). L1= level 1 (within). L2 = level 2 (between). ML = maximum likelihood. * $p < .05$; ** $p < .01$; *** $p < .001$.

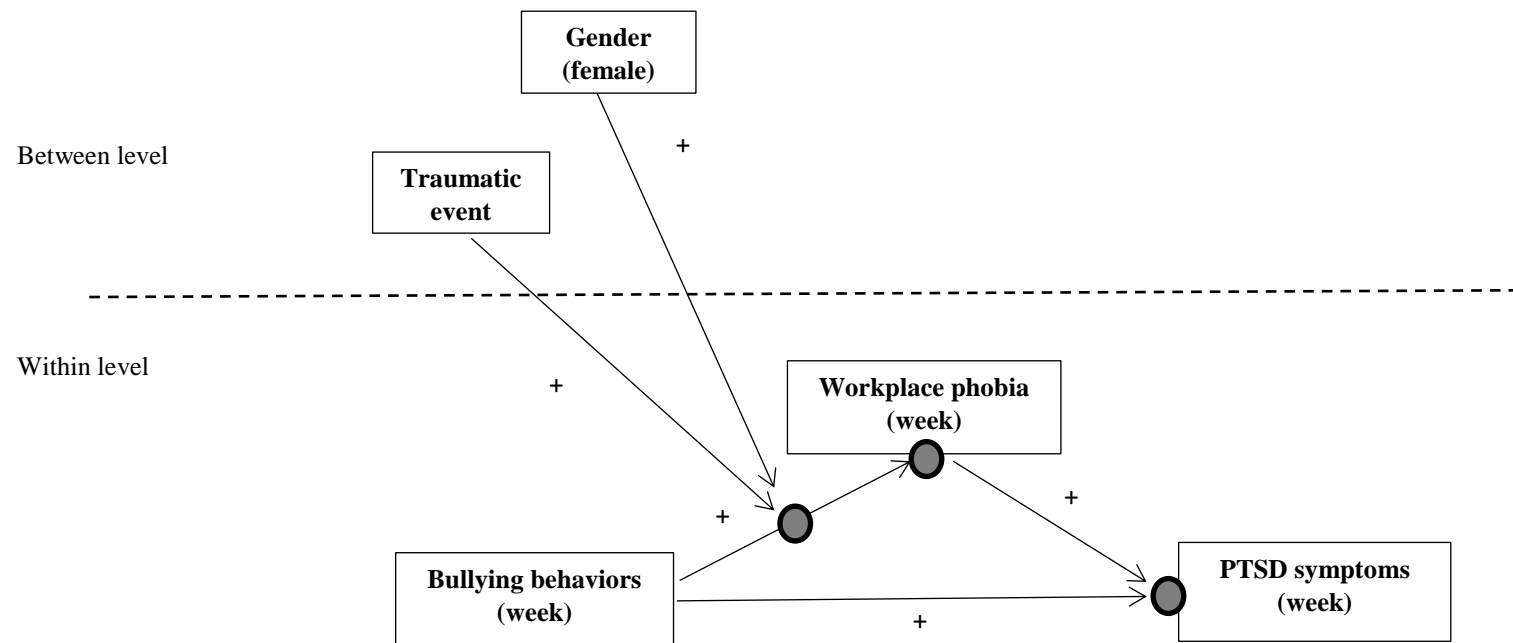


Figure 1. Conceptual model guiding the study.

Note. Grey infilled circles indicate random factors.

Figure 2. Graphical representation of the cross-level interaction between weekly bullying behaviors and traumatic life event in last 12 months on weekly workplace phobia

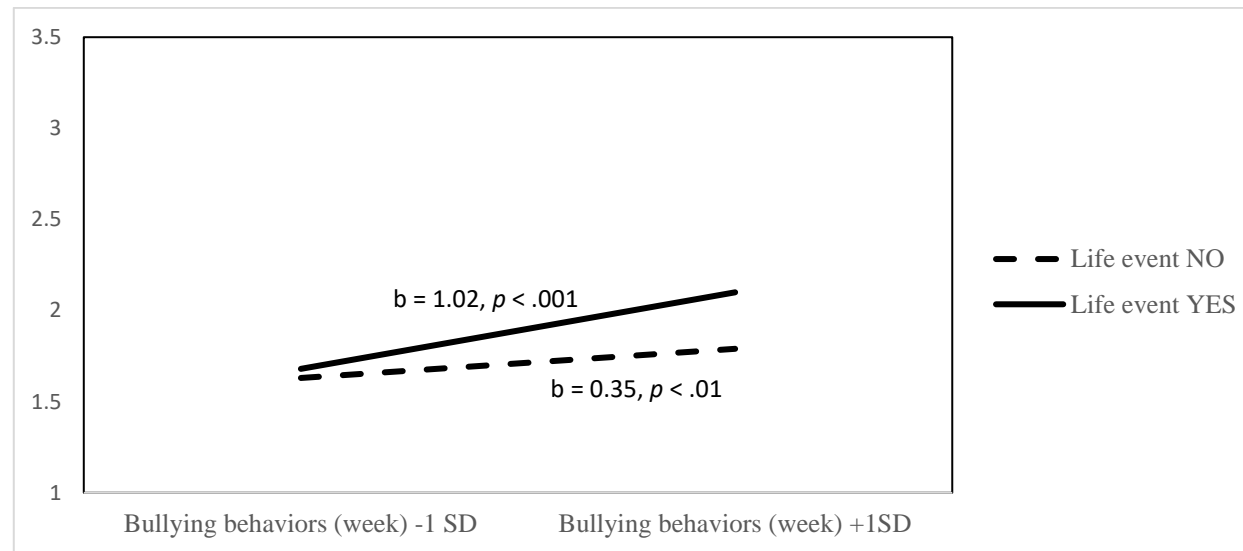


Figure 3. Graphical representation of the same level (i.e., between) interaction of weekly bullying behaviors and gender on weekly workplace phobia

