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# When do poor health increase the risk of subsequent workplace bullying? The dangers of low or absent leadership support

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**ABSTRACT**

Studies have shown that mental health problems may lead to workplace bullying, a so-called reversed effect. The current study investigated if this effect can be found also for poor health in general. When the reverse effect occurs is unclear. Supervisor support has been shown to moderate different antecedents and consequences associated with bullying. It was hypothesized that poor health would be a risk factor for bullying and that a supportive leadership style would moderate this risk.

Using a two-wave design with 958 participants, logistic regression was used to test the association between health and workplace bullying. A moderation analysis tested supportive leadership style as a moderator. The study resulted in two novel findings: (a) a supportive leadership style has a strong mitigating effect on bullying behaviours, both directly and as a buffer; (b) poor health in general, including poor physical health, about doubles the risk of becoming a victim of workplace bullying. Together, these two findings make a boundary condition for the reverse effect clearer. The reversed effect only seems to be present when the level of leadership support is low or absent.

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Supportive leadership; health; workplace bullying; reversed effect; moderation; longitudinal

## Introduction

A growing number of studies have shown that workplace bullying and its consequences are harmful both for the organization itself (Nielsen & Einarsen, 2018), but mainly for the exposed individual. There are severe negative consequences for the individual in terms of, for example, poor health, mental health problems, and suicide ideation (Einarsen & Nielsen, 2015; Nielsen & Einarsen, 2012; Nielsen et al., 2015). There is some support for a reversed effect in which individuals with mental health problems over time may risk becoming victims of bullying (Einarsen & Nielsen, 2015; Nielsen & Einarsen, 2012). However, much is still unknown and more research is needed to better understand this reverse effect (Nielsen & Einarsen, 2018). In this study, we investigated the reverse effect using a more general measure of health compared to mere mental health as in previous studies. We also extend previous research by investigating a possible boundary condition for the reverse effect, studying the moderating effect a supportive leadership style can have, and thus reducing the risk that poor health over time will lead to workplace bullying. Moderating effects of supportive leadership have been investigated before (e.g., Gardner et al., 2013; Nielsen, Christensen et al., 2020), but this study contributes with new knowledge on how such support can moderate the reverse effect.

### *Workplace bullying and health*

Workplace bullying is defined as a systematic exposure to negative behaviours, occurring over an extended period of time in situations in which the exposed has difficulties defending him - or herself (Einarsen et al., 2020; Leymann, 1996). About 10% of the working population is subject to occasional bullying and 3% to serious bullying (Zapf et al., 2020), and the problem occurs at all levels and in all sectors of working life (Zapf et al., 2020). According to Rosander and Blomberg (2019) workplace bullying is not an either-or-phenomenon, but an escalating process with different levels of both vulnerability and risk. When workplace bullying is studied, exposure to bullying behaviours as indicators of workplace bullying is usually measured (Nielsen, Notelaers et al., 2020). In this study, we use the term bullying for exposure to bullying behaviours in the workplace when the frequency or number of different negative acts one is exposed to be high. When categorizing exposure to bullying behaviours to separate those who are not bullied from the bullied we use the term "victims of bullying" as suggested by Notelaers and Einarsen (2013).

The emergence of bullying is usually explained mainly by deficiencies in the organization – the so-called work environment hypothesis (Salin & Hoel, 2020). The support for the hypothesis is strong (Van Den Brande et al., 2016), but not conclusive (Nielsen & Einarsen, 2018). Organizational risk factors often include a lack of clarity in the organization in terms of, for example, ambiguous and conflicting roles (Van Den Brande et al., 2016). A laissez-faire leadership is also described as a strong risk factor for bullying (Skogstad et al., 2007). An alternative or complementary way of explaining the emergence of bullying is to explain it from an individualistic perspective, the so-called individual disposition hypothesis (Nielsen & Einarsen, 2018), including personality and individual factors of both perpetrators and victims. There may be a

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circular pattern where certain personality factors over time may pose a risk of bullying exposure, but at the same time bullying also may lead to personality changes in exposed individuals (Podsiadly & Gamian-Wilk, 2017). The same circular pattern may also exist for poor health (Einarsen & Nielsen, 2015). It is well established that the consequences of bullying include a variety of health-related problems (Einarsen & Nielsen, 2015; Nielsen & Einarsen, 2012). It has also been suggested that mental health problems, especially anxiety, are a risk factor for the occurrence of bullying (Einarsen & Nielsen, 2015; Kivimäki et al., 2003; Nielsen & Einarsen, 2012).

The mechanism of the reversed effect, that is, why or when health problems could lead to bullying, is not well understood. For mental health problems, the gloomy perception mechanism (Einarsen & Nielsen, 2015; De Lange et al., 2005) has been suggested. A person with mental health problems may have a lower threshold and tolerance for negative acts in the workplace and, thus, may perceive and interpret the actions of others as abusive to a greater extent with an inherent risk of exaggerated causal attributions (Van Reemst et al., 2016). However, the gloomy perception perspective may not be a relevant theoretical perspective for understanding the association between poor health in general and the risk of bullying as it would assume that physical health problems could change a person's perception and interpretation of actions by others. Instead, we suggest a group process perspective where social group identity may play an important role (Escartín et al., 2013). This perspective has been used to study how minority position and in-group deviance may be a risk factor for bullying (e.g., Glambek et al., 2020; Rosander & Blomberg, 2021), using the concept of non-prototypicality from the self-categorization theory (SCT, Turner et al., 1987) under the broader umbrella of the social identity theory (SIT, Tajfel & Turner, 1979).

The SCT suggests that individuals, at least partly, understand and experience others and themselves as a function of group membership. The tendency to categorize oneself and others as members of social groups is a key premise of the SCT, as well as that people partly derive their identity from the common group identity of the groups to which they belong. In this process, a typical or ideal group member, a prototype, is important. A prototypical group member is a shared idea among group members of the ideal or most typical group member (Hogg & Terry, 2000), and serves as an important part of the group identity. The idea of a prototypical group member informs the group of behaviours, norms, and attitudes that are valued and expected in the group. It thereby represents core features of the group, making group life more stable, predictable, and safe. Further, a valued prototype enhances a salient group identity, which also functions as an individual self-enhancing mechanism in achieving a positive self-image through social comparisons (Abrams & Hogg, 1988; Festinger, 1954). Too much deviation from the group prototype can be perceived as a threat to the group identity and thereby increase the risk for negative treatment of non-prototypical group members (Hogg, 2005; Lewis et al., 2020), as well as scapegoating processes and displaced aggression (Hogg, 2005; Thylefors, 1999; Zapf & Einarsen, 2020). A study by Glambek et al. (2020) showed that non-prototypicality is a predictor of workplace bullying.

Being regarded as deviant in relation to the views or characteristics of the majority in a group may lead to an increased vulnerability. It can be actual or perceived norm breaking behaviours (Baillien et al., 2009), as well as perceived deviations based on stereotypes, such as minority status of gender (Eriksen & Einarsen, 2004; Kabat-Farr & Cortina, 2014; Rosander et al., 2020) or ethnicity (Rosander & Blomberg, 2021). A study by Fevre et al. (2013) showed that both physical and psychological disabilities, as well as long-term illness, are associated with a higher risk of being ill-treated at work. In one of the suggested explanations of this association, Fevre et al. argued that ill-treatment could be due to conflicts over workplace norms, such as performance and attendance norms. Horton and Tucker (2014) have also pointed to the importance of workplace norms, such as productivity and working hard and long hours, in increasing the risk for people with disabilities and long-term health problems to be viewed as outsiders.

Based on SCT and research of non-prototypicality, we expect that poor health in general, both physical and mental health, increases the risk of norm breaking behaviours in the work group. Failing to meet norms of attendance and performance may deviate from the group prototype and be interpreted as a threat to group stability and pose a risk of subsequent bullying (Baillien et al., 2009). We did not only focus on mental health problems as has often been the case in previous studies (e.g., Einarsen & Nielsen, 2015). Instead, we used a salutogenic perspective (e.g., Millar & Hull, 1997) and investigated the extent to which variations in general health, also including physical aspects, can predict future bullying exposure. Only measuring mental health problems, for example, depression and anxiety, means a risk of missing important information about the effects and risks associated with more normal health variations (Bowling, 2005). Any kind of poor health, with the potential to influence work performance and the ability to meet work-related expectations and norms, may over time increase the risk of workplace bullying. Thus, a hypothesis is that poor health in general is a risk factor and that both physical and mental health increase the risk of workplace bullying.

Hypothesis 1: *Poor general health, including both physical and mental health problems, is a risk factor for workplace bullying.*

### *Support and leadership*

Social support can have a protective (buffering) effect in many situations in working life as shown, for example, in the job-demand-control-support model (Karasek & Theorell, 1990). However, social support contains several components where different kinds of behaviours and actions may be relevant (Foster, 2012): (a) emotional support, for example, empathic and trusting behaviours (Cohen, 2004; Thoits, 1982); (b) instrumental support in the form of, for example, practical help (Cohen, 2004; Schat & Kelloway, 2003; Thoits, 1982); (c) informal support through advice and guidance (Cohen, 2004; Schat & Kelloway, 2003; Thoits, 1982); and (d) valuing and appreciating support by providing information that an individual can use to evaluate themselves and their actions (Thoits, 1982). Social

support can also have different sources. Foster (2012) pointed to four such sources: work colleagues, supervisors, the organization, and family and friends. Nielsen, Christensen et al. (2020) examined the first three of these and found a general protective effect on the health for those exposed to bullying behaviours. Blomberg and Rosander (2020) showed that support from colleagues and support from supervisors are distinct phenomena, but dependent on each other. The absence of supervisory support may block the positive effects of support from colleagues in connection with exposure to bullying behaviours.

To understand how a supportive leadership style may prevent or mitigate bullying, a group process perspective may be helpful (Escartín et al., 2013). Using insights and key concepts from social identity theory and self-categorization theory, such as prototypicality, norms, and role models (Tajfel & Turner, 1979; Turner et al., 1987) to understand the role and function of the leadership is also important. As a role model, a leader can have substantial influence on subordinates ethical or unethical behaviours (Hattke & Hattke, 2019). From a social identity perspective, a leader is often prototypical (Hogg & van Knippenberg, 2003) and may through this prototypicality define what values and behaviours are legitimate (Shamir et al., 1993). How the leadership is performed is important for the development of norms in the work group, for example, an active promotion of ethical values by a leader may inspire followers to behave ethically (Hattke & Hattke, 2019). Connecting leadership style and social identity, Kunze and Bruch (2010) showed that a transformational leadership can foster an integrative social identity for work groups and thereby moderate the effect of conflicts due to deviance and different social identities in the workplace.

Previous studies have shown that supportive leadership has a protective effect on health risks due to bullying behaviours (Gardner et al., 2013), and against early retirement (Clausen et al., 2019). Supervisor support can also strengthen employees' control and influence over their work situation, which can reduce the risk of bullying behaviours (Goodboy et al., 2017). Theoretically, supportive leadership is described as a specific leadership style that is included in transformational leadership (Bass, 1985; Carless et al., 2000). A supportive leadership style means that a supervisor provides emotional, instrumental, informal, and valued and appreciative support (House, 1981) with the dimension of emotional support––caring, listening, and showing understanding––being the most important. It resembles compassionate leadership (Gilbert & Basran, 2019), characterized by caring and insightful empathy. In this study, we use the term supportive leadership style with primarily focus on the dimension of emotional support – caring, listening, and creating confidence and trust (Bass, 1985; House, 1981).

Social support in general and supervisor support in particular have been shown to buffer both antecedents and consequences of bullying. However, for the effects of leadership on bullying behaviours, most attention has been given to the active-passive dimension (Nielsen & Einarsen, 2018) over the supportive dimension. Drawing on theory and research on supportive leadership, as well as the SCT and the SIT in understanding the function and effect of leadership, it is reasonable to expect that the supportive dimension of leadership may be of crucial importance for the risk of bullying in association with the reversed effect. Thus, we predict that a supportive leadership style will function as a buffer for the reversed effect, that is, a boundary condition for when the leadership style will start influencing the association between poor health and bullying.

Hypothesis 2: *A supportive leadership style moderates the association between poor health and workplace bullying, acting as a buffer for the reversed effect.*

## Methods

### Study design and sample

In this two-wave study, the participants were employees at a Swedish governmental institution. A web-based work environment survey was carried out in March 2015 and in November 2016. The 20 months lag between measures was due to the organization's planning for concurrent work environment surveys. In total, 1846 employees were invited to participate in the first wave, and the response rate was 75% (n = 1383). In the second wave 1945 employees were invited and 1387 responded (71%), and of those answering the second wave 958 responded at both waves (69%). The average age was 45.2 (*SD* = 10.3). Of the participants, 58% were women (age span 22–71 years; median age 45; mean age 44.8, *SD* = 10.3), and 42% were men (age span 23–65 years; median age 46; mean age 45.8, *SD* = 10.4).

The study is a part of a research project called WHOLE – Work, Health, Organization, Leadership, Experience. The project was approved by The Regional Ethical Review Board at Linköping, Sweden (protocol number 2014/282-31and have been performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. All participants gave their informed consent before participating in the study.

### Measures

Workplace bullying was measured using the Negative Acts Questionnaire–Revised (NAQ–R; Einarsen et al., 2009) which provides a variable also covering the early stages of bullying behaviours (e.g., Nielsen, Notelaers et al., 2020; Rosander & Blomberg, 2019). The NAQ–R consists of 22 items describing different kinds of active or passive negative behaviour that can be a part of a bullying process when occurring regularly over time. We used a Swedish translation of the original English and Norwegian versions (Rosander & Blomberg, 2018). For each of the 22 items respondents indicate the frequency of the exposure during the last 6 months. The scale is from 1 (Never) to 5 (Daily). High scores on the NAQ–R indicate bullying. Using the NAQ–R from the second wave as the dependent variable in the analysis, we also controlled for the NAQ–R from the first wave. The internal consistency of the NAQ–R, measured by Cronbach's alpha, was .84 in the first wave and .85 in the second wave.

The NAQ–R was used in two ways in the study, as a continuous variable in the moderation analyses and as a dichotomous variable in the logistic regression analyses. We created a dichotomous variable using the cut-off value of 45 for the sum score of the NAQ–R, where individual values of 45 or higher were categorized as victims of workplace bullying as suggested by Notelaers and Einarsen (2013).

To investigate poor health, we used the Salutogenic Health Indicator Scale (SHIS; Bringsen et al., 2009; Rosander & Blomberg, 2018) consisting of 12 different aspects of health, measuring individuals' experiences of physical, mental, and social well-being. Bringsen et al. (2009) suggested two subscales of the SHIS: Interpersonal Characteristics and Interactive Functioning. Rosander and Blomberg (2018) tested the psychometric properties of the SHIS in a large sample and presented two new dimensions: Self-confident and Capable (SHIS-SC), and Vigorous and Energetic (SHIS-VE). The first dimension covers mental and social aspects, and the second covers physical aspects of health. The SHIS has a semantic differential scale from 1 to 6, for example, "uneasy, tense" versus "calm, relaxed", "little energy" versus "a lot of energy". The labels of the 12 pair of opposite statements are as follows: resolution, creativity, expression of feelings, social capacity, concentration, state of morale, tension, illness, energy experience, physical function, sleep, and energy level. The first seven items are included in the SHIS-SC, and the last five in the SHIS-VE. In the present study, high total scores on SHIS indicate poor health but not primarily sickness or illness. Cronbach's alpha for the SHIS in the first wave was .95. For the two subscales of SHIS, the Cronbach's alphas were .93 (SHIS-SC) and .89 (SHIS-VE).

To investigate a supportive leadership style, we used the scale Perceived Supportive Leadership (PSL) from the Psychosocial Work Environment Questionnaire (PSYWEQ; Blomberg & Rosander, 2020; Rosander & Blomberg, 2018), a questionnaire validated in a Swedish context. The PSL uses a 7-point Likert scale, from 1 (do not agree at all) to 7 (agree completely) and contains 10 items. The items cover different aspects of trust and confidence in the leader with statements of interaction and experience connected to one's immediate supervisor, mainly focusing on areas such as trust, getting help or support, and feeling safe. High scores on the PSL indicate a perceived supportive leadership style. We used the PSL in the second wave to keep the correlation between the predictor and the moderator as low as possible (Hayes, 2018). Cronbach's alpha for the PSL was .97.

When investigating the hypotheses, we included covariates. We ran the analyses both with and without them, using only those that clearly effected the outcome in the results.

In investigating the first hypothesis, we included a measure of role ambiguity and role conflict in the organization from the first wave as covariate (Ambiguity and role conflict – RIM; 6 items; Rosander & Blomberg, 2018). This variable was included as it has been established that different kinds of role problems are important organizational predictors of workplace bullying (e.g., Hauge et al., 2007; Van Den Brande et al., 2016). Role problems are also correlated with mental distress (Finne et al., 2014). Cronbach's alpha for the RIM was .92. We also used age as a covariate as it has been reported that it may have an effect on bullying (Zapf et al., 2020). Gender was first included but did not have any effect in the analyses and was therefore not used in the final analyses.

For the second hypothesis, we used the same covariates, but did also include an additional covariate from the second wave; a measure of perceived support from co-workers (Perceived Support from Close Co-workers – PSC; Rosander & Blomberg, 2018). The reason for using the PSC as a control was that Blomberg and Rosander (2020) showed that support from supervisors and close co-workers interact and influence each other. To clarify the effect of supervisor support, we adjusted for the effect of co-worker support. Cronbach's alpha for the PSC was .91.

### *Sensitivity analyses*

We conducted three sensitivity analyses to further test the robustness of the results. For the first one, we excluded 22 participants that indicated that they were bullied by a supervisor. Unfortunately, we had no follow-up question of who the perpetrator was in connection to the NAQ–R. However, we also measured self-labelled bullying, which had a follow-up question where the participants could indicate if they were bullied by a supervisor. Self-labelled bullying was measured using a definition of workplace bullying and followed by a single-item question about exposure. The definition was as follows:

> Bullying occurs when a person, repeatedly and over time, is subjected to negative treatment from one or more people, in situations where the victim has difficulty defending oneself. It is not bullying if two equally strong people are in a conflict with each other.

The question was as follows: "Have you been exposed to bullying during the past six months?", with a 5-point response scale: 1 (*no*), 2 (*yes, once in a while*), 3 (*yes, every month*), 4 (*yes, every week*), and 5 (*yes, every day*). We used six-months as time frame to correspond to the time frame used in the NAQ–R. The time frame is based on the definition of bullying (e.g., Einarsen et al., 2020), saying that the label bullying is used when negative behaviours are being repeated "over a period of time (e.g., about six months)" (p. 26).

The reason for this exclusion was that perceived bullying from a supervisor may influence the hypothesized effect of a supportive leadership style on bullying. That is, if there is an effect of a supportive leadership style in protecting against the risk that poor health may lead to bullying, the effect could, at least partially, be explained by the fact that some may have been bullied by a supervisor. By excluding such potential cases, additional tests could be performed to further test the hypothesis that a supportive leadership style has an independent protective effect.

In a second sensitivity analysis, we controlled for an inverted measure of laissez-faire leadership, Active Leadership (AL), when investigating the second hypothesis. The reason for using the AL as a control was that laissez-faire leadership––that is, passive, avoidant, and absent leadership (Bass & Avolio, 1994)––has been described as a strong risk factor for bullying (Skogstad et al., 2007). However, being active and present is not conceptually the same as being supportive as there are several forms of active destructive leadership (e.g., Aasland et al., 2009).

To pinpoint the actual support dimension in the leadership, we therefore adjusted for the passive-active dimension in the leadership using the AL based on four items concerning leadership activity. The questions cover to what extent a supervisor grasps what is important, is good at making decisions, responds quickly, and if he/she is available (the first four items in the scale Active and Constructive Leadership; ACL; Rosander & Blomberg, 2018). Cronbach's alpha for the AL was .93.

The third sensitivity analysis was a combination of the first two. In this analysis, we excluded all participants that indicated that they were bullied by a supervisor (wave 2) and also controlled for active leadership (wave 2).

### *Statistical analyses*

All data has been analysed on an individual level, not on a group or an organizational level. Although we had some information about work groups, which turned out to be inconclusive as the organization in some cases used the group codes more as an administrative coding and not as a way to group employees into actual work groups (e.g., some codes included members from different geographical locations). This would have made it very difficult to interpret a multilevel analysis. For the analysis, IBM SPSS 27 for Mac was used. Of the original 958 responses, 938 responses were complete with no missing values. No replacement method was used.

Hypothesis 1 was tested using logistic regression predicting the risk of becoming a victim of bullying at wave 2. First, the two subscales of SHIS were tested separately to see if one of mental and social aspects or physical aspects of health had a stronger effect on subsequent bullying. If the effects were about equal, the full SHIS would be used as a measure of health.

For hypothesis 2, a moderation model was tested using the PROCESS macro 3.4 (Hayes, 2018) based on ordinary least squares (OLS) regression analysis of conditional effects. Using model 1 in the PROCESS macro, we tested if perceived supportive leadership (wave 2) moderated the association between health (wave 1) and exposure to bullying behaviours (wave 2). Covariates in the model were sex, age, ambiguous, and conflicting roles (wave 1) and perceived support from close co-workers (wave 2). A bootstrap method with 5 000 samples was used to create bias corrected confidence intervals for all the included measures. The predictor and the moderator were mean centred prior to analysis.

## Results

The means, standard deviations, and intercorrelations between the included measures are presented in Table 1. There was a positive correlation between health (predictor) and exposure to bullying behaviours (dependent variable). The correlation was significant for the full SHIS scale ($r = .29$, $p < .01$) as well as for the subscales Self-confident and Capable ($r = .28$, $p < .01$) and Vigorous and Energetic ($r = .27$, $p < .01$). That the two subscales are related aspects of an overall salutogenic health perspective is evident looking at the high correlation between them. The correlations between a perceived supportive leadership style (moderator) and the three measures of health were $r = -.24$ to $r = -.27$, all $p < .01$.

### *Regression and moderation analysis*

First, two logistic regression analyses were carried out to investigate if either of the two dimensions of health could predict being a victim of bullying at the second wave (NAQ–R sum ≥45), and if so, were the effects similar. For the first subscale, SHIS-SC, controlling for age (OR = 1.05, 95% CI 0.98–1.12) and ambiguity and role conflict in the organization (OR = 1.81, 95% CI 1.13–2.90) and adjusting for bullying at wave 1 (OR = 29.13, 95% CI 6.64–127.68) the odds ratio was 2.31 (95% CI 1.22–4.08). For SHIS-VE, controlling for age (OR = 1.05, 95% CI 0.98–1.12) and ambiguity and role conflict in the organization (OR = 1.93, 95% CI 1.22–3.08), and adjusting for bullying at wave 1 (OR = 29.48, 95% CI 6.95–125.10) the odds ratio was 1.90 (95% CI 1.08–3.36). Both subscales were associated with an about twofold risk for bullying at wave 2, with mental and social aspects of health posing a slightly higher risk compared to physical aspects. For the full scale, the results also showed an increased risk (OR = 2.24, 95% CI 1.20–4.17, see Table 2). The results supported hypothesis 1.

Testing the second hypothesis we conducted a moderation analysis. The results for both subscales were significant with an almost similar risk testing hypothesis 1, we primarily focused on the full scale of SHIS for this analysis but included the subscales to see if there were any clear differences. Using the full scale of SHIS, the moderation analysis tested if perceived supportive leadership (wave 2) moderated the association between health (wave 1) and bullying behaviours (wave 2). Adjusting for baseline bullying behaviours, age, ambiguity, and role conflict and perceived support from close co-workers, the analysis showed

**Table 1.** Descriptive statistics and Pearson's product-moment correlations for the study variables.

| | Wave | *N* | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Age | 1 | 958 | 45.24 | 10.34 | | | | | | | | | |
| 2. SHIS | 1 | 945 | 3.16 | 1.22 | −.15** | | | | | | | | |
| 3. SHIS SC | 1 | 945 | 3.05 | 1.24 | −.14** | .97** | | | | | | | |
| 4. SHIS VE | 1 | 945 | 3.31 | 1.31 | −.15** | .94** | .83** | | | | | | |
| 5. NAQ–R | 1 | 958 | 1.16 | 0.22 | .09** | .34** | .34** | .30** | | | | | |
| 6. NAQ–R | 2 | 958 | 1.15 | 0.24 | −.06 | .29** | .28** | .27** | .60** | | | | |
| 7. PSL | 2 | 955 | 5.64 | 1.42 | −.05 | −.26** | −.27** | −.24** | −.34** | −.50** | | | |
| 8. PSC | 2 | 953 | 6.03 | 1.06 | −.01 | −.22** | −.23** | −.19** | −.29** | −.47** | .50** | | |
| 9. AL | 2 | 932 | 5.36 | 1.52 | −.05 | −.20** | −.20** | −.17** | −.31** | −.46** | .85** | .46** | |
| 10. RIM | 1 | 957 | 3.08 | 1.40 | −.08* | .34** | .37** | .28** | .40** | .34** | −.40** | −.28** | −.40** |

*Note*. Salutogenic health indicator scale (SHIS), SHIS Self-confident & Capable (SHIS SC), SHIS Vigorous & Energetic (SHIS VE), Negative acts questionnaire–Revised (NAQ–R), Perceived supportive leadership (PSL), Perceived support from close co-workers (PSC), Active leadership (AL), Ambiguity, and role conflict (RIM)
*$p < .05$; **$p < .01$

**Table 2.** Logistic regression analysis predicting victims of bullying (NAQ-R ≥ 45) at wave 2.

| | OR | 95% CI | p |
|---|---|---|---|
| **Health and well-being (full SHIS Wave 1)** | 2.24 | 1.20–4.17 | .011 |
| Age | 1.05 | 0.98–1.12 | .169 |
| Ambiguity and role conflict in the organization (RIM Wave 1) | 1.84 | 1.15–2.94 | .011 |
| Workplace bullying (NAQ–R Wave 1) | 28.96 | 6.65–126.08 | < .001 |

*Note.* $R^2$ = .07 (Cox & Snell), .46 (Nagelkerke). Model $\chi^2(4) = 67.02$, $p < .001$.

that a supportive leadership style both have a buffering effect on the association between health and bullying behaviours 20 months later ($b = -0.02$, 95% BCa CI [−0.03; −0.02], $p < .001$) as well as a direct negative effect on bullying behaviours ($b = -0.03$, BCa CI [−0.04; −0.02], $p < .001$). The explained variance was 54% and the interaction effect resulted in a 3% increase of the explained variance in the model, $F$ (1, 930) = 61.26, $p < .001$. This supports the second hypothesis.

We performed the same analysis for the two subscales. The results were similar but again the results were slightly stronger for the mental and social aspects of health (SHIS-SC), compared to physical aspects (SHIS-VE). For SHIS-SC, the effect was $b = -0.02$, 95% BCa CI [−0.03; −0.02], $p < .001$ and for SHIS-VE the effect was $b = -0.02$, 95% BCa CI [−0.03; −0.01], $p < .001$. For both subscales, the explained variance of the dependent variable was 54%, but the interaction of SHIS-SC increased the variance slightly more, 3.2%, $F$ (1, 930) = 66.06, $p < .001$, compared to SHIS-VE, 2.4%, $F$ (1, 930) = 47.28, $p < .001$. In Table 3 the three moderation analyses are presented in full detail.

The association between health and bullying behaviours depends on the level of a supportive leadership style that is illustrated in Figure 1 (using three levels of the PSL equal to the 16th, 50th, and 84th percentiles). The comparison of the subscales of SHIS resulted in small differences, and only the full scale of SHIS was used to illustrate the results. When a supportive leadership style was low there was a significant association between health and subsequent exposure to bullying behaviours (for the 16th percentile $b = 0.03$, $p < .001$), which was the same for the full SHIS scale as well as for the subscales. A Johnson–Neyman test of significant regions (Hayes, 2018) showed that for the full SHIS scale this association was significant below the 31st percentile of the PSL scale. For the SHIS-SC, the association was significant below the 29th percentile and for the SHIS-VE it was significant below the 32nd percentile. For values above that, the association was no longer significant, meaning that a supportive leadership style had a buffering effect. When the supportive leadership style was high, the association between health and exposure to bullying behaviours 20 months later turned into a significant negative association (for the 84th percentile of the full SHIS scale as well as for SHIS-SC $b = -0.03$, $p < .001$, and for SHIS-VE $b = -0.02$, $p < .001$). A Johnson–Neyman test showed this protecting effect for values of the PSL scale higher than the 57th percentile when using the full scale of SHIS, the 54th percentile when using SHIS-SC and the 64th percentile when using SHIS-VE. Thus, the association between health and subsequent bullying behaviours is highly dependent on the extent of a supportive leadership style.

**Table 3.** Three models of moderation analysis predicting workplace bullying (NAQ–R) at wave 2 ($N$ = 938).

| | $b$ | 95% BCa CI | SE B | $t$ | $p$ |
|---|---|---|---|---|---|
| ***Health and well-being (full scale of SHIS wave 1)*** | 0.00 | [−0.01; 0.01] | 0.00 | 0.65 | $p = .517$ |
| Perceived supportive leadership (PSL wave 2) | −0.03 | [−0.04; −0.02] | 0.00 | −6.55 | $p < .001$ |
| PSL x SHIS[a] | −0.02 | [−0.03; −0.02] | 0.00 | −7.83 | $p < .001$ |
| Age | −0.00 | [−0.00; −0.00] | 0.00 | −1.88 | $p = .060$ |
| Negative Acts Questionnaire–R (wave 1) | 0.47 | [0.41; 0.53] | 0.03 | 16.41 | $p < .001$ |
| Ambiguity and role conflict (wave 1) | 0.01 | [−0.00; 0.01] | 0.00 | 1.25 | $p = .210$ |
| Perceived support from close co-workers (wave 2) | −0.05 | [−0.06; −0.04] | 0.01 | −8.16 | $p < .001$ |
| ***Self-confident & Capable (SHIS-SC wave 1)*** | 0.00 | [−0.01; 0.01] | 0.00 | 0.20 | $p = .841$ |
| Perceived supportive leadership (PSL wave 2) | −0.03 | [−0.04; −0.02] | 0.00 | −6.46 | $p < .001$ |
| PSL x SHIS-SC[b] | −0.03 | [−0.03; −0.02] | 0.00 | −8.13 | $p < .001$ |
| Age | −0.00 | [−0.00; −0.00] | 0.00 | −1.93 | $p = .054$ |
| Negative Acts Questionnaire–R (wave 1) | 0.47 | [0.41; 0.52] | 0.03 | 16.30 | $p < .001$ |
| Ambiguity and role conflict (wave 1) | 0.01 | [−0.00; 0.02] | 0.00 | 1.30 | $p = .196$ |
| Perceived support from close co-workers (wave 2) | −0.05 | [−0.06; −0.04] | 0.01 | −8.27 | $p < .001$ |
| ***Vigorous & Energetic (SHIS-VE wave 1)*** | 0.01 | [−0.00; 0.01] | 0.00 | 1.29 | $p = .196$ |
| Perceived supportive leadership (PSL wave 2) | −0.03 | [−0.04; −0.02] | 0.00 | −6.97 | $p < .001$ |
| PSL x SHIS-VE[c] | −0.02 | [−0.03; −0.01] | 0.00 | −6.88 | $p < .001$ |
| Age | −0.00 | [−0.00; −0.01] | 0.00 | −1.79 | $p = .074$ |
| Negative Acts Questionnaire–R (wave 1) | 0.48 | [0.42; 0.53] | 0.03 | 16.75 | $p < .001$ |
| Ambiguity and role conflict (wave 1) | 0.01 | [−0.00; 0.01] | 0.00 | 1.11 | $p = .269$ |
| Perceived support from close co-workers (wave 2) | −0.05 | [−0.06; −0.04] | 0.01 | −7.94 | $p < .001$ |

*Note.* $R^2$ = 0.54 (all three models). The predictor and moderator were mean centred.
[a]The interaction results in a 3.0% increase in $R^2$, $F$ (1,930) = 61.26, $p < .001$
[b]The interaction results in a 3.2% increase in $R^2$, $F$ (1,930) = 66.06, $p < .001$
[c]The interaction results in a 2.4% increase in $R^2$, $F$ (1,930) = 47.28, $p < .001$

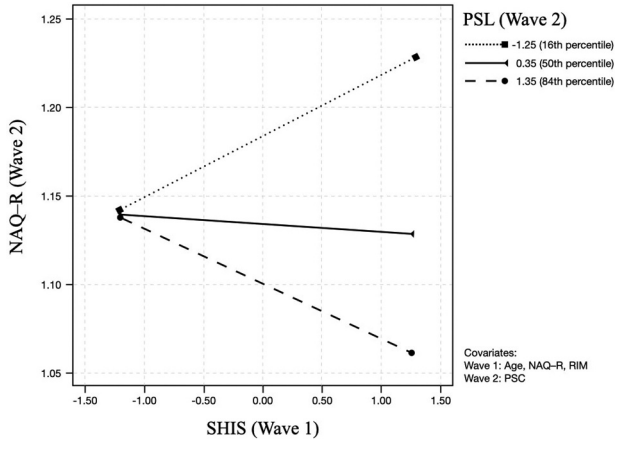


**Figure 1.** The conditional effect of health (full scale of SHIS at wave 1) on bullying (NAQ–R wave 2) as a function of a supportive leadership style (PSL wave 2).

### *Sensitivity analyses*

The result showed a direct effect of a supportive leadership style on bullying behaviours. This could in part be understood as situations where the supervisor in some cases was the actual bully. Such situations could influence the findings and may explain the strong effect of a supportive leadership. Another aspect that may have influenced the results is if a supportive leadership style also could be construed as an opposite of a laissez-faire leadership, which is a well-known risk factor of workplace bullying. Therefore, we conducted three sensitivity analyses. First, we investigated if removing cases where the supervisor was the bully would change the outcome. Second, we controlled for the active-passive dimension of leadership to see if the results remained the same. Finally, we tested both together.

In the first sensitivity analysis, we excluded participants that self-labelled as bullied by a supervisor in the second wave. The same moderation model was used, and the results were replicated for both the full SHIS scale and the two subscales. As expected, the results were a little bit weaker as we reduced the number of participants included. The explained variance was 42.4 to 42.6% for the different scales and the interaction resulted in a 1% $R^2$-change. The interaction effect was still significant, and there was a direct effect of a supportive leadership style on bullying behaviours. The buffering effect was still as distinct and with the same pattern as before. The only difference was that for SHIS-VE, the Johnson–Neyman test did not present a higher threshold for significant effect, which means that when using SHIS-VE as predictor there was not a significant reversed moderation effect when a supportive leadership style was high.

We also conducted a sensitivity analysis where we adjusted for active leadership. There was a very strong correlation between supportive leadership style and active leadership ($r = .85$, $p < .001$) which was expected as a highly supportive leadership also probably can be perceived as active, and vice versa. The association was somewhat stronger than expected, but there was still about 30% variance left when active leadership was used as a control. To test for potential error variance inflation, a multicollinearity test showed that VIF was 3.91 for supportive leadership style and 3.76 for active leadership, meaning that multicollinearity was not a specific problem in this sensitivity analysis.

Using the full sample (not excluding participants that self-labelled as bullied by a supervisor in the second wave), the AL had no significant direct effect on bullying behaviours while the PSL still had a significant direct effect. The moderation analysis turned out to be almost identical to the original model, and all significant findings survived. The explained variance was 55% and the interaction resulted in a 4% $R^2$-change when using the full scale of SHIS as well as the SHIS-SC as predictor and a 3% $R^2$-change when using the SHIS-VE.

Combining the two sensitivity analyses (excluding participants that self-labelled as bullied by a supervisor in the second wave, and also controlling for active leadership in the second wave), the analysis turned out to be the same. All significant findings survived. The explained variance was 43% and the interaction resulted in a 1.4 to 1.7% $R^2$-change depending on which of the three scales of health that were used as predictor.

For all details of the results of the sensitivity analyses, contact the first author.

## Discussion

The current study tested two related hypotheses; both were supported. The results showed that poor health over time is positively related to exposure to workplace bullying – the risk of becoming a victim of bullying was about twofold. This result is in part a replication of what has previously been shown (e.g., Einarsen & Nielsen, 2015), but adding a wider concept of poor health and not only mental health problems. The risk was slightly higher for mental and social aspects of health compared to physical aspects, but the differences were small. We could also present a possible boundary condition for *when* the reversed effect is present by showing that a supportive leadership style moderated the association between health and workplace bullying, acting as a buffer for the exposed. This finding contributes new knowledge about the reverse effect and possible mitigating effects in bullying.

Previous research has indicated that mental health problems, and especially anxiety, may be a risk factor for bullying (Einarsen & Nielsen, 2015; Kivimäki et al., 2003; Nielsen & Einarsen, 2012). Poor health in a more general sense has, to our knowledge, not previously been studied as a risk factor for subsequent bullying. In the current study, we have shown that poor health in general, and not only mental health problems, can contribute to subsequent workplace bullying. This corresponds to what Bowling (2005) referred to as the health variations in the healthy population. It is possible that poor health can be attributed to organizational deficiencies, so we adjusted for ambiguous and conflicting roles––a well-established organizational risk factor for bullying (Van Den Brande et al., 2016).

In previous studies presenting a reversed effect (Einarsen & Nielsen, 2015; Kivimäki et al., 2003; Nielsen & Einarsen, 2012), the gloomy perception mechanism (De Lange et al., 2005) has been used to explain the results. However, these studies have mainly focussed on mental health problems, whereas the present study focuses on health in general, including mental/social aspects as well as physical aspects. Our results showed some differences between these aspects where mental/social aspects had a slightly stronger effect on bullying compared to physical aspects. Both were, however, significant predictors of bullying with an about twofold risk. This implies a risk of *general* poor health leading to subsequent bullying. Trying to understand this association between poor health and subsequent bullying, we turn to social identity theory (Tajfel & Turner, 1979), and especially the self-categorization theory (SCT, Turner et al., 1987), rather than the gloomy perception mechanism, which is more associated with possible consequences of mental health problems (e.g., Einarsen & Nielsen, 2015). Drawing on the SCT in understanding the results, people with poor health may have difficulties to perform due to physical, mental, and/or

social problems thereby having difficulties living up to norms and expectations at work. Thus, they may be exposed to co-workers' and managers' frustration and irritation, possibly resulting in excessive criticism and social exclusion. This could be understood using the concept of non-prototypical group members (Hogg & Terry, 2000). Glambek et al. (2020) showed that non-prototypical group members had an elevated risk for bullying exposure, for example, through scapegoating. So, from a perspective of non-prototypicality, it may be reasonable to assume that one, through poor health, may be *or may become* a non-prototypical group member not meeting the norms of performance, availability, expertise, and/or behaviour in the same way as before. If this is the case, the risk of bullying for a person that experiences poor health may possibly elevate if the group is under some sort of pressure that may increase the risk of scapegoating processes (Coyne et al., 2004). One example of such a pressure could be a high workload that itself poses a risk for workplace bullying (Van Den Brande et al., 2016). In this sense, it may be reasonable that the risk of bullying of individuals with poor health may be amplified by a high workload on a group level.

An interesting question regarding the association between health and subsequent bullying is whether it is a linear relationship or if there are bifurcation points or thresholds at certain levels of poor health at which the risk of bullying becomes real. It is also possible that different aspects of health have different thresholds. If non-prototypicality and difficulties meeting norms of performance, expertise, attendance, and behaviours in the workgroup are mechanisms behind the association, there could also be a tolerance level for others that decides the risk. More research into these questions is needed, for example, using a latent class cluster approach (e.g., Magidson & Vermunt, 2004).

Besides the finding of a doubled risk of poor health leading to bullying, an important finding was that there may also be a boundary condition for this association as it was highly dependent on a supportive leadership style. The results showed both a direct effect of a supportive leadership style on bullying and a moderating effect on the association between health and bullying.

Different kinds of leadership styles may have a direct effect on the level of bullying. For example, destructive effects have been shown for autocratic (Agervold, 2009), tyrannical (Hauge et al., 2007), and laissez-faire leadership (Skogstad et al., 2007). Mitigating leadership effects have also been shown for transformational leadership (Astrauskaite et al., 2015; Dussault & Frenette, 2015) and transactional leadership (Dussault & Frenette, 2015). To our knowledge, the current study is the first to show a possible direct mitigating effect of a supportive leadership style that is one of several dimensions in the much broader concept of transformational leadership (Carless et al., 2000). We controlled for perceived support from close co-workers as supervisor and co-worker support are highly related but still separate phenomena (Blomberg & Rosander, 2020). To clarify and pinpoint the supportive dimension in terms of caring, listening, and creating confidence and trust (Bass, 1985; House, 1981) we also ran a sensitivity analysis adjusting for active leadership. The results showed that the active-passive dimension of leadership did not affect the results. That means that in our study a supportive leadership style was not just the opposite of laissez-faire, but a distinct leadership dimension. Also, in the sensitivity analysis where the bullying supervisors were excluded from the second wave, the original effect was just as clear. Thus, the effect is not about to what extent supervisors are bullies or not. In addition, combining the two sensitivity analyses in a third test did not change the results, indicating robust findings. Although the moderation analysis is based on longitudinal data, the direct effect is, however, only based on cross-sectional data, as bullying and a supportive leadership style were both measured on the second wave. Hence, one cannot conclude a causal link. However, research on the work environment hypothesis (e.g., Van Den Brande et al., 2016) has shown that many organizational factors, including different kinds of leadership, over time have a clear effect on the prevalence of bullying. Thus, it may be reasonable to assume that this result indicates a direct and clear mitigating effect of a supportive leadership style on bullying.

Buffering effects from supervisor support on bullying and its consequences have been the focus of several studies (Clausen et al., 2019; Gardner et al., 2013; Goodboy et al., 2017); however, the current study contributes with a novel approach. The results showed that perceived supervisor support may act as a buffer also for the reversed effect. That means that even if poor health may be a general risk factor for subsequent bullying, it seems to depend on the extent of a supportive leadership style. This indicates that a supportive leadership style has a strong mitigating effect on the risk following general poor health. The total buffering effect is present already at around the lower third of the leadership scale used (the PSL). Thus, the risk that generally poor health leads to bullying was only present when the supportive leadership style was low or absent. Interestingly, the result also showed that for high levels of a supportive leadership style (from around the 60$^{th}$ percentile on the PSL) the association between health and bullying was negative. That is, when the supportive leadership style was high, the risk of bullying was *lower* for those that had poor health.

We also found some small differences in the buffering effects, when using the two different subscales of health as predictor. The buffering effect of a supportive leadership style was slightly stronger for mental/social aspects of health than for physical aspects. But the similarities are more striking. The pattern of the effect was similar as well as of the level of a supportive leadership style threshold when the full buffering occurs. Thus, in the present study, it seems more reasonable to assume a strong buffering effect by a supportive leadership style on the association between poor health *in general* and subsequent bullying. However, the *indication* of a slightly higher risk for mental/social aspects of health compared to physical aspects, as well as the indication of a slightly stronger buffering effect for mental/social aspects, calls for more research.

To understand the strong buffering effect, one may again turn to the self-categorization theory (Turner et al., 1987), with the concept of non-prototypical group members (Hogg & Terry, 2000). Could the buffering effect be about supervisors providing support to an employee that due to poor health, for example, has difficulties meeting norms of performance in the

group? A supportive leadership style may also stand as a role model in the workplace (Hattke & Hattke, 2019), for example, fostering care and respect (Astrauskaite et al., 2015), trust, and acceptance (Baumeister & Leary, 1995), and also lowering the risks of conflicts in the workplace (Einarsen et al., 2016). In this way, a supportive leadership style may counteract the risk of interpersonal frustrations and the exclusion of group members that do not meet the norms of performance, availability, expertise, and/or behaviour in the workplace. Supervisor support could also include direct interventions towards an employee (Avolio et al., 1999) understanding the needs and providing understanding and trust in the actual situation.

One topic still needs to be addressed. The measure of health and a supportive leadership style was not measured at the same wave, which was due to methodological reasons. The supportive leadership style was measured in the second wave, 20 months after the first. We do not know to what extent a supportive leadership style was present at the time we measured health, or if a poor health still was present 20 months later. The result indicates, however, that if poor health was present 20 months ago, the risk of being exposed to bullying today depends on the extent of having a supervisor with a supportive leadership style today. So, having a supportive supervisor today, means that the risk of being exposed to bullying that grows out of poor health of the past (20 months ago) is strongly reduced. All in all, the findings point to the fact that a supportive leadership style directly lowers the incidence of bullying, and specifically mitigates the risks for those that have had poor health in the past.

### *Strength and limitation*

The longitudinal design of the study is a strength that makes it possible to investigate causal links, which is important when studying interrelated concepts, such as bullying, health, and supportive leadership. The size of the sample with almost 1000 respondents is also a strength. Also, the response rate is a strength, with more than 70% of the invited participants answering the questionnaire at each wave.

We used a 20-month lag between the waves due to the organization's planning of their concurring work environment surveys. Using a somewhat longer time lag would have been preferable (at least 24 months) as that could have produced a stronger support for long-term effects. On the other hand, a longer time lag could mean a risk of employees changing jobs and thereby dropouts. The somewhat short time frame in the study also invites questions about vicious circles, which were discussed by Einarsen and Nielsen (2015). They argue that bullying and illness can go back-and-forth and that studies with time lags shorter than 2 years may tap into such a process, making the causal direction unclear.

There are other limitations that need to be addressed. First, the concept of prototypicality is used as a theoretical construct as a reasonable explanation of the effects in the study. It was, however, not assessed in the work environment survey, which means that prototypicality is only suggested as a theoretical explanation of the mechanism behind the reversed effect. Second, the data is collected from a single cohort of workers in a governmental institution in Sweden. That limits the representativeness of the results. Third, the data is based on a self-report questionnaire. Relying on such a single data collection method may threaten construct validity and may lead to common method bias (Donaldson & Grant-Vallone, 2002). Such problems, however, seem to be rarer than has been assumed (Spector, 2006). In the present study, we estimate that the risk for biased response is small. The reason for this is that the data was collected in the context of a regular work environment survey to which the participants were used to submit information. The situational pressure to submit socially desirable answers was therefore low. As for the risk of common method bias (Podsakoff et al., 2003), a previous study using the same or similar variables as the current study showed minimal common variance (Blomberg & Rosander, 2020) and Harman's single-factor test on the current variables showed no indication of common method bias issues.

Finally, as the correlation between a supportive leadership style and active leadership was high, we only used a measure of active leadership in sensitivity analyses. If we use it in the main analysis, adjusting for the active-passive dimension in the leadership would leave only about 30% variance left for the supportive dimension. It is somewhat surprising that we still find such strong direct and buffering effects of a supportive leadership style in the sensitivity analyses. This calls for more research into how the active-passive dimension and the supportive dimension in the leadership are related, and which of them that are most important.

## Conclusion

In the present longitudinal study, we found that poor health may be a general risk factor that doubles the risk of subsequent bullying 20 months later. However, the study also showed a possible boundary condition of *when* this risk is at hand, as the association between health and bullying was highly dependent on the extent of a supportive leadership style. The supportive leadership style seems to have both a direct mitigating effect on bullying and a strong buffering effect on the association between health and bullying. The buffering effect showed, in fact, that the risk of bullying growing out of poor health among employees may only be present when the leadership support is low or absent.

## Disclosure statement

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## Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to privacy or ethical restrictions.

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