

Unacceptable behaviour, health and wellbeing at work

A cross-lagged longitudinal study

Report submitted to the IOSH Research Committee

Christine A Sprigg and Alexandra Martin

Institute of Work Psychology, Management School
University of Sheffield

Karen Niven and Christopher J Armitage

Department of Psychology
University of Sheffield

Published in 2010



The
University
Of
Sheffield.

IOSH, the Chartered body for health and safety professionals, is committed to evidence-based practice in workplace health and safety. We maintain a Research for Public Benefit Fund to support research and inspire innovation as part of our work as a 'thought leader' in health and safety.

All recipients of funding from our Research for Public Benefit Fund are asked to compile a comprehensive research report of their findings, which is subject to peer review.

For more information on how to apply for grants from the Fund, visit [iosh.com/research](https://www.iosh.com/research)

Contents

List of tables and figures	4
Acknowledgments	5
Abstract	6
Executive summary	7
1 Introduction	9
2 Method	17
3 Results: sample characteristics (T1 data only)	20
4 Results: prevalence of violence, bullying and incivility	23
5 Results: differences in the prevalence of unacceptable behaviour by sector, role, gender and educational level	25
6 Results: cross-sectional main effects analyses on T1	30
7 Results: are ‘matched cases’ different from ‘non-matched cases’?	34
8 Results: cross-lagged main effects analyses: the relationships between unacceptable behaviour at work and wellbeing of employees	36
9 Results: cross-lagged moderation analyses: the moderators of these causal relationships	40
10 Discussion and recommendations	45
Appendices	
1 Correlation tables	51
2 Questionnaire measures	56
3 Descriptive statistics on unacceptable behaviour measures	59
References	61

List of tables and figures

Tables

1	Online returns	20
2	Paper returns	20
3	Distribution of respondents by organisational sector (self-reported)	21
4	Distribution of respondents by organisational level	21
5	Distribution of respondents by ethnic origin	21
6	Distribution of respondents by educational level	22
7	Percentage of respondents reporting 'frequent' experience of unacceptable behaviour over a six-month period	23
8	Percentage of respondents reporting 'frequent' unacceptable behaviour by organisational sector	25
9	Gender differences in self-reported 'frequent' exposure to unacceptable behaviour	26
10	Organisational level differences in self-reported 'frequent' exposure to unacceptable behaviour	27
11	Educational level differences in self-reported 'frequent' exposure to unacceptable behaviour	28
12	Cross-sectional main effects: standardised regression weights and R2 values for predicting each measure of wellbeing using bullying, incivility and violence as predictors (T1)	31
13	Differences between 'non-matched' and 'matched' cases	35
14	Details of the cross-lagged regression analyses conducted	37
15	Cross-lagged regression: unacceptable behaviour predicting emotional exhaustion	38
16	Cross-lagged regression: unacceptable behaviour predicting general mental strain	39
17	Cross-lagged regression: unacceptable behaviour predicting physical illness	39
18	Cross-lagged moderation: bullying from inside organisations, optimism and emotional exhaustion	41
19	Cross-lagged moderation: bullying from inside organisations, job demands and emotional exhaustion	42
20	Cross-lagged moderation: bullying from inside organisations, self-esteem and general mental strain (GHQ)	43
21	Cross-lagged correlations (matched data)	51
22	Correlations on matched data (predictor variables at T1 collinearity analyses)	53
23	Cross-sectional correlations T1 (unmatched data only)	54
24	Analysis of respondents witnessing unacceptable behaviour towards others	60

Figures

1	Cross-lagged research paradigm	10
2	Cross-sectional main effects model	30
3	Cross-lagged main effects model	36
4	Cross-lagged moderation paradigm	40
5	The moderating effects of optimism on the relationship between bullying from inside organisations and emotional exhaustion	41
6	The moderating effects of job demands on the relationship between bullying from inside organisations and emotional exhaustion	43
7	The moderating effects of self-esteem on the relationship between bullying from inside organisations and general mental strain	44

Acknowledgments

We would like to thank all the organisations and employees who contributed to this study during 2008 and 2009.

We thank Briony Sutcliffe and Ruth Giles, MSc occupational psychology students at the Institute of Work Psychology, for their participation in the Time One field research.

We are grateful to IOSH for financially supporting this study. In addition, we thank the three anonymous peer reviewers who commented on an earlier version of this report.

Christine A Sprigg would like to thank her University of Sheffield colleagues Dr Kamal Birdi (Institute of Work Psychology), Professor Rod Nicolson (Institute of Work Psychology) and Dr Rachel O'Hara (School of Health and Related Research) for their feedback and constructive comments on an earlier draft of this report.

Abstract

This research examined the relationship between three types of unacceptable behaviour at work (namely violence, bullying and incivility) from both internal (eg colleagues) and external (eg customers) sources, and employee health and wellbeing (ie levels of anxiety, depression, emotional exhaustion, post-traumatic symptoms, general mental strain and physical health symptoms). This research was conducted in nine organisations. This is one of the few studies to collect longitudinal data on unacceptable behaviour and wellbeing from UK employees.

Using a questionnaire devised for the study, data were collected from 5,681 employees (3,652 at Time One (T1) and 2,029 at Time Two (T2)). (Note: This report examines the data from T1 and the matched data only. The additional unmatched data collected at T2 will be used in other dissemination activities arising from this research.) It was possible to conduct longitudinal cross-lagged analysis on data from 169 employees. The most frequently reported unacceptable behaviour was bullying from inside organisations, with 39 per cent of participants experiencing at least one negative act either weekly or daily over the previous six months. The frequency of bullying was examined using a measure which includes 22 negative acts.⁹ These negative acts vary in intensity from 'being exposed to an unmanageable workload' and 'having your opinions and views ignored' to 'threats of violence or physical abuse or actual abuse'. The most frequently reported negative acts were 'being exposed to an unmanageable workload' from internal sources and 'being shouted at or being the target of spontaneous anger or rage' from external sources.

The longitudinal cross-lagged analyses showed that employees who reported frequent bullying from inside their organisation also reported higher levels of emotional exhaustion, general mental strain and physical illness symptoms six months later. The relationship between bullying and emotional exhaustion was moderated by both workload and optimism: those with higher workloads and lower optimism reported the highest degree of emotional exhaustion six months later. The relationship between bullying and general mental strain was moderated by self-esteem, such that those with low self-esteem experienced the highest degree of general mental strain six months later.

Arguably, the best way to tackle unacceptable behaviour at work is to deal with those people who behave unacceptably. However, this is not always feasible and this research suggests that workplace interventions designed to enhance employee optimism and self-esteem might limit the negative health impacts of bullying. Moreover, there is evidence to show that ignoring unacceptable behaviour is not only bad for employee health but also for organisational functioning and performance.⁹⁷

Executive summary

This report presents findings from a large-scale questionnaire-based study conducted over a period of one year. Data were collected from nine organisations and over 5,000 employees. (Note: This report examines the data from T1 and the matched data only. The additional unmatched data collected at T2 will be used in other dissemination activities arising from this research.)

More specifically, the research addressed four main questions:

- 1 What is the prevalence of violence, bullying and incivility – originating both inside and outside organisations – in a large, diverse sample of UK employees?
- 2 What are the relationships between violence, bullying and incivility, and wellbeing outcomes (eg mental strain) for employees?
- 3 What are the most important moderators (eg social support from managers) of these causal relationships?
- 4 What are the most promising candidates for the development of successful interventions to limit the risks to employee health from violence, bullying and incivility?

The main findings in relation to these questions are as follows.

In answer to question 1, it was found that the most frequently reported unacceptable behaviour was bullying from inside organisations (reported by 39 per cent of respondents), followed by incivility from inside the organisation (17 per cent) and violence from inside (4 per cent). Corresponding prevalence rates for bullying, incivility and violence from outside the organisation were 17, 7 and 10 per cent respectively.

The frequency of bullying was examined using a measure which includes 22 negative acts. These acts vary in intensity from 'being exposed to an unmanageable workload' and 'having your opinions and views ignored' to 'threats of violence or physical abuse or actual abuse'. The most frequently reported negative act from an internal source was 'being exposed to an unmanageable workload' whereas from an external source it was 'being shouted at or being the target of spontaneous anger or rage'.

In answer to question 2, bullying from inside the organisations emerged as having the most significant causal influence on the wellbeing-dependent variables tested. Bullying from inside the organisation at Time One (July/August 2008) was found to have a significant causal influence on levels of emotional exhaustion, general mental strain and physical illness recorded at Time Two (February/March 2009). Incivility from inside the organisation and witnessing unacceptable behaviour at work were also consistent predictors of these health and wellbeing outcomes.

In answer to question 3, optimism was found to be a moderator of the causal relationship between bullying from inside the organisation and emotional exhaustion. More specifically, those employees low in optimism had elevated levels of emotional exhaustion when subjected to more frequent bullying. Thus, more optimistic employees appear to be somewhat protected from the negative effects of frequent bullying.

Workload demands also moderated the causal relationship between bullying from inside the organisation and emotional exhaustion. Here, employees subjected to high job demands experienced elevated emotional exhaustion in times of more frequent bullying. This suggests that high workload demands exacerbate the negative impact of frequent bullying.

Finally, self-esteem was found to moderate the relationship between bullying from inside the organisation and general mental strain and physical illness. Those with low self-esteem experienced elevated general mental strain and physical illness when bullying was more frequent.

In respect of question 4, the authors suggest that to improve wellbeing in relation to bullying in the workplace, the following should be considered:

- **Workload demands.** When organisations are considering the prevalence of bullying, they should examine workload demands too. By tackling workload demands simultaneously, they will limit the additional emotional impact that high workloads can have on employees who are also experiencing frequent negative acts. Thus, one potentially successful intervention in any workplace is to monitor levels of work demand for all employees and take the necessary steps to reduce this workload.

- **Self-esteem.** This study supports the buffering hypothesis for self-esteem, as those with high self-esteem show relatively stable levels of general mental strain in times of either infrequent or frequent bullying. These findings give managers another option in the form of working to boost the self-esteem of these employees.
- **Optimism.** Another plausible way to limit the potential negative impact of unacceptable behaviour on health is to consider interventions that raise employee optimism. Existing research suggests that optimism may serve to protect against post-traumatic pathology following a violent episode.⁵¹ The present study is valuable because little previous research has been conducted in the UK that has examined optimism in relation to the outcomes of bullying.

In addition, the researchers found that there were encouraging levels of policy and procedure in place to deal with unacceptable behaviour at work in the organisations that agreed to take part in the study. More specifically, from the matched sample, approximately 95 per cent of participants reported that their organisation had a system whereby employees could report incidents of unacceptable behaviour. Seventy-four percent of matched participants said that their organisation had 'other policies' relating to unacceptable behaviour and 65 per cent had received training on how to deal with unacceptable behaviour at work. It is the opinion of the authors of this report that such policies, procedures and training are vital in tackling unacceptable workplace behaviour.

This research provides sound evidence that bullying (from within organisations) causes employee emotional exhaustion, general mental strain and physical health symptoms at a period of six months (or more) later. Both first-hand experiences of bullying and incivility and witnessing others being the targets of such behaviour have a negative impact on employee wellbeing.

In suggesting that interventions designed to enhance employee optimism and self-esteem may help in reducing the effects of unacceptable behaviour at work, it is not the intention of this report to shift the emphasis away from tackling those who behave unacceptably. Rather, it is suggested that such interventions may help to limit the damage these people do to others and the efficient functioning of the organisations they work in.

There is a strong moral imperative for everyone to consider the way they act towards others in the workplace to safeguard their own wellbeing and that of others. There is now evidence that ignoring violence, bullying and incivility in the workplace is not only bad for employee health but could be bad for organisational functioning and performance.⁹⁷

In conclusion, the authors echo the sentiments expressed so eloquently by one study participant, who wrote:

I hope this survey leads to better standards of behaviour in the workplace and guidelines on how to treat people, how to speak to people, respect for other people in the workplace and dare I suggest a return to decency & politeness.

1 Introduction

1.1 Background

Unacceptable behaviour at work includes acts of work-related violence, bullying and incivility (which are defined in section 1.3 below). In the past 15 years or so, the topic of unacceptable behaviour in the workplace has started to be acknowledged as an occupational health concern.¹ Academic research on the topic has grown dramatically and there is now significant knowledge of employee consequences of such behaviour.

Much useful research has focused on looking at the prevalence of unacceptable behaviour, its antecedents and its consequences. However, further development in the field has been limited by definitional and conceptual issues and a paucity of longitudinal studies. There are even fewer longitudinal or prospective studies on these kinds of unacceptable behaviour among UK employees, and fewer still that look at employees in more than one sector. Indeed, Beswick, Gore & Palferman² recommended to the UK Health and Safety Executive (HSE) that it consider more longitudinal and prospective studies to provide a more robust evidence base.

A recent notable highlight was an ambitious UK-based study by Hoel & Giga,³ which examined the effectiveness of interventions in reducing negative (bullying) behaviour at work. However, they concluded that there was 'insufficient evidence in the data to make any conclusions with regard to the efficacy of particular interventions' (p. 64).

The aim of this study is to build on the advancements of Hoel & Giga's research, by establishing two facts across a large and varied sample of UK employees from multiple organisational sectors:

- what the relationships are between work-related unacceptable behaviour and wellbeing outcomes (eg physical health, mental strain) over time
- what personal and organisational factors may moderate the negative effects of unacceptable behaviour.

By identifying the factors that moderate the negative effects of unacceptable behaviour, it will be possible to understand what makes the difference between, on the one hand, employees who report ill health (mental or physical), go off sick, and desire to leave an organisation following unacceptable behaviour, and on the other hand, employees who suffer few or no negative consequences. This will allow recommendations for future interventions to be made that can be used to alleviate the negative effects of unacceptable behaviour at work.

To meet its aims, the present study employs a cross-lagged longitudinal design, and comprehensively measures three distinct but related aspects of unacceptable behaviour at work: violence, bullying and incivility. Furthermore, a wide range of psychological and health outcomes are also measured, along with a number of potential moderating factors (eg social support, optimism, resilience, self-esteem). These are shown in Figure 1.

1.2 Problems of definition

Throughout this research the term 'unacceptable behaviour' has been used with collaborating organisations to reflect the broad approach applied to studying negative behaviour in the workplace. However, it is important to understand what types of behaviour are being referred to.

Many researchers have written about the variety of conceptual and operational definitions being used in the area of unacceptable behaviour. Indeed, in their recent review paper, Barling, Dupré & Kelloway¹ mention these difficulties. The present study addresses this by measuring three aspects of aggression in the workplace: violence, bullying and incivility.

1.3 Definitions

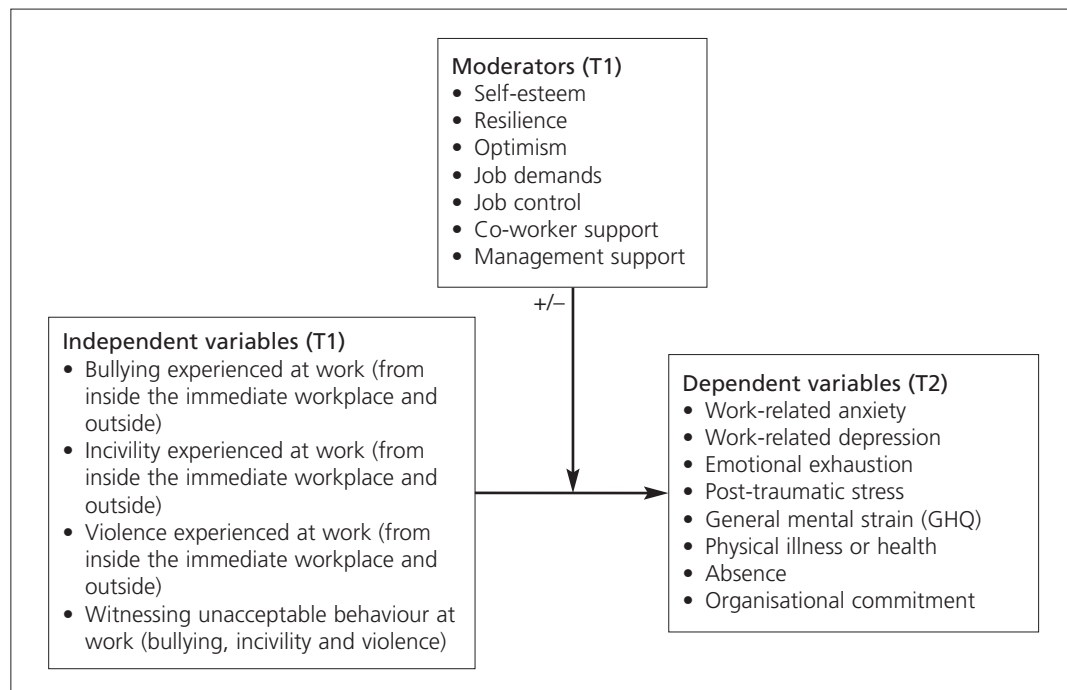
1.3.1 What is unacceptable behaviour at work?

Behaviour by an individual or individuals within or outside an organisation that is intended to physically or psychologically harm a worker or workers and occurs in a work-related context.⁴ (p.191)

This definition is useful in three ways:

- it is consistent with the general human aggression literature

Figure 1
Cross-lagged
research paradigm



- it is general enough to include a wide range of types of physical and psychological workplace aggression behaviour
- it encompasses aggressive behaviour from a variety of sources within and outside organisations.

In this research, unacceptable behaviour is viewed as a higher-order construct that includes three main types of behaviour: violence, bullying and incivility. The present authors recognise that previous research may have used other terms and that this is one of the conceptual difficulties in this research area. Thus, this research aimed specifically to measure these three types of behaviour, which are described in detail in the following sections.

1.3.2 What is workplace violence?

In this study, 'violence' is defined as physical and active forms of violence and threat. For example, to measure violence, a scale was used (see Section 2 below for full details) that asks about the following events:

- having objects thrown at you
- being spat at or bitten
- having personal property damaged.

This aligns with research by Schat, Frone & Kelloway,⁵ who see workplace violence as consisting of behaviour that are intended to cause physical harm.

Prevalence

Schat *et al.*⁵ reported that 6 per cent of the workforce (in a nationally representative probability sample of US workers) reported incidents of physical violence over a 12-month period.

1.3.3 What is workplace bullying?

Bullying is defined here as a psychological, non-physical form of unacceptable behaviour. Einarsen *et al.*⁶ suggest the following definition:

Bullying at work means harassing, offending, socially excluding someone or negatively affecting someone's work tasks. In order for the label bullying (or mobbing) to be applied to a particular activity, interaction or process it has to occur repeatedly and regularly (e.g., weekly) and over a period of time (e.g., about six months). Bullying is an escalating process in the course of which the person confronted ends up in an inferior position and becomes the target of systematic negative social acts. A conflict cannot be called bullying if the incident is an isolated event or if two parties of approximately equal 'strength' are in conflict. (p. 15)

As a supplement, Rayner & Cooper⁷ draw attention to a practical definition provided by the Andrea Adams Trust (a charity which supports bullied employees and their employers).

[Workplace bullying is] unwarranted humiliating offensive behaviour toward an individual or groups of employees. Such... attacks are typically unpredictable, unfair... and often unseen. [It is] an abuse of power or position that can cause such anxiety that people gradually lose all belief in themselves, suffering physical ill health or mental distress as a direct result.

Much research on bullying has also been conducted by Scandinavian and German researchers.^{8–12}

Bullying behaviour includes aspects such as:

- threats to professional status
- threats to personal standing
- isolation
- overwork
- destabilisation.¹³

Prevalence

Einarsen & Skogstad¹⁰ report an average bullying prevalence of 8.6 per cent during a six-month reporting period. This figure may be a little misleading, as this research (a review of 14 Norwegian studies) used a definition of bullying that includes prolonged exposure to negative acts, resulting in a prevalence rate likely to show only the most serious cases. Thus, this figure underestimates the rate of less severe bullying. Indeed, as if to exemplify this proposition, Einarsen & Raknes⁹ found that 75 per cent of Norwegian engineering employees reported experiencing at least one incident of general harassment during the previous six months. A study by Rayner in the UK¹⁴ found that half the working population described themselves as bullied. Further discussion of prevalence can be found in Coyne *et al.*¹⁵

More recent research by Hoel & Giga³ found prevalence rates for bullying of 13.6 per cent and 14.3 per cent at two time points. These researchers stated that this was higher than the national average of 10.6 per cent established by research conducted in 2000.¹⁶ In the Hoel & Giga study on the effectiveness of organisational interventions on bullying, study organisations had bullying prevalence rates that varied from 10.8 to 23 per cent. The prevalence of 10.6 per cent reported by Hoel & Cooper¹⁶ uses the 'self-labelling' method.

1.3.4 What is workplace incivility?

Incivility refers to milder forms of psychological mistreatment. Andersson & Pearson defined workplace incivility as:

Low-intensity deviant behaviour with ambiguous intent to harm the target, in violation of workplace norms for mutual respect. Uncivil behaviours are characteristically rude and discourteous, displaying a lack of regard for others.¹⁷ (p. 457)

Prevalence

A survey of public sector workers in the US found that 71 per cent of respondents reported at least some experience of workplace incivility during the previous five years, and 6 per cent reported experiencing such behaviour many times.¹⁸

1.3.5 Unacceptable behaviour from outside vs inside an organisation

One of the key elements of the present study is the measurement of unacceptable behaviour from both inside and outside organisations. This decision was based on the recommendations of Grandey, Dickter & Sin,¹⁹ who suggested that future research should examine unacceptable behaviour from supervisors and co-workers and from customers as well. This allows the examination of the comparative wellbeing outcomes of unacceptable behaviour from intra- and extra-organisational sources.

1.3.6 The victim's perspective

This study is concerned only with the victim's perspective of these acts. It was not intended to gather information about the people who perpetrate bullying, violence and incivility. Although the present authors acknowledge that it is vital for future research to take into account the perpetrator aspect (see Hershcovis *et al.*²⁰), this was outside the scope of this study, whose focus is on the health

consequences for individuals of these negative acts. It is notable that perpetrators report being victims as well.^{21,22}

1.4 Previous research

1.4.1 Cross-sectional studies on unacceptable behaviour at work and employee health and wellbeing

Cross-sectional studies have found relationships between a range of unacceptable behaviours and health.^{23–31} Although these studies are important, they report relationships between variables at a single point in time. As a result, it is still unclear whether unacceptable behaviour causes ill health or whether ill health causes people to report more unacceptable behaviour.

Bowling & Beehr³² report on the specific associations between what they term ‘workplace harassment’ (which they define as ‘interpersonal behaviour aimed at intentionally harming another employee in the workplace’, p. 998) and ill health. They found that workplace harassment was positively associated with specific elements of wellbeing: generic strains (0.35), anxiety (0.31), depression (0.34), burnout (0.39) and physical symptoms (0.31). Broadly, these researchers believe this is evidence that harassment (or aggression) is a stressor with similar effects to other workplace stressors.

Similarly, Mikkelsen & Einarsen³³ detail significant relationships between exposure to bullying behaviour at work and health and wellbeing outcomes. Exposure to bullying at work positively correlated with psychological health complaints (eg symptoms of anxiety and depression, 0.52) and psychosomatic complaints (eg dizziness, stomach ache and chest pain, 0.32).

The present study measures a range of the above psychological and psychosomatic conditions, advancing knowledge in this area by examining these relationships longitudinally, at two separate time points.

1.4.2 Longitudinal or prospective studies on unacceptable behaviour at work and employee health and wellbeing

A review of available online literature revealed very few prospective or longitudinal studies investigating unacceptable behaviour and employee health and wellbeing.

A prospective study by Kivimäki *et al.*³⁴ found a strong association between workplace bullying and subsequent depression. The researchers concluded that bullying is an aetiological factor for mental health problems. In an earlier prospective study, Kivimäki, Elovainio & Vahtera³⁵ also found that workplace bullying was associated with an increase in sickness absence among hospital staff.

Hogh, Henriksson & Burr³⁶ conducted a five-year follow-up study on the relationship between aggression at work and psychological health. In their longitudinal analyses, associations were found between exposure to nasty teasing at baseline and subsequent psychological health problems five years later. Similarly Brousse *et al.*³⁷ evaluated levels of stress and anxiety–depression disorders developed by targets of workplace bullying, together with outcomes 12 months later. They concluded that workplace bullying can have severe mental health repercussions, triggering serious and persistent disorders or pathologies.

Using the few available longitudinal studies into workplace violence, Hogh & Viitasara³⁸ conducted a systematic review of 16 longitudinal studies on non-fatal workplace violence, in particular looking at risk factors and consequences of exposure to violence at work. Five studies demonstrated that being subjected to violence at work has both acute and long-term consequences for the exposed staff. Two studies also found symptoms of post-traumatic stress disorder in victims.

It is clear that there are few studies that have examined the impact of unacceptable behaviour on health in a longitudinal manner, despite calls for such studies.³⁹ There are many reasons why there is such a dearth of these types of study. They are expensive and difficult to conduct in busy organisations on any topic in organisational research, let alone one as sensitive as unacceptable behaviour. In reality, until such studies are conducted, we know little about the complex causal relationships of these types of behaviour to health. In particular, longitudinal research into unacceptable behaviour and health outcomes has been somewhat neglected in the UK context. The present research seeks to strengthen knowledge in this area by measuring aspects of the unacceptable behaviour–health relationship longitudinally in a UK context, allowing for cause–effect inference to be drawn.

1.4.3 Research into vicarious unacceptable behaviour and employee health and wellbeing

Vicarious experiences of unacceptable behaviour are likely to produce negative consequences, even in employees who are not victims themselves. Such employees might either empathise with victims or react negatively to a workplace in which these events occur. Vicarious unacceptable behaviour might also cause employees to fear that such behaviour may be directed at themselves in the future. Vicarious unacceptable behaviour can have similar outcomes to direct forms of harassment, although the consequences may take a milder form.³²

Supporting this notion, Hansen *et al.* investigated self-reported health symptoms and physiological stress reactivity among bullied employees and employees who witnessed bullying at work.²⁷ Their results indicated that witnesses experienced higher anxiety than non-bullied employees, while bullied respondents reported more symptoms of depression, anxiety and negative affectivity. Vartia⁴⁰ also investigated the effects of workplace bullying on the wellbeing of immediate targets and observers. Results from this study show that both the immediate victims of bullying and employees observing it reported more stress reactions than respondents from workplaces with no bullying.

As can be seen from the above research, unacceptable behaviour can cause problems for the entire workplace and not just for the immediate targets. The present study examines in detail the effects of witnessing such behaviour.

1.4.4 Research into demographic and occupational predictors of unacceptable behaviour

This study examines a number of background demographic variables that previous research findings suggest may be relevant.

Gender

Some gender differences have been found in bullying research, although Zapf *et al.*⁴¹ suggest the research and theorising on this issue is limited. Vartia & Hyyti⁴² found that women were more often bullied by co-workers, whereas men were more often bullied by immediate supervisors or managers. Conversely, Zapf *et al.* conclude that there is little evidence that women are more at risk because of the socialisation processes women undergo (eg to be generally less assertive and aggressive than men).⁴¹ Indeed, Schat *et al.*⁵ state that the available data on violence suggests that men are more likely than women to both experience⁴³ and commit^{44,45} violence. Schat *et al.*⁵ draw attention to the effects of gender segregation in workforces. For example, nurses working in healthcare are more at risk of violence and they are more likely female than male. Other research suggests that women are more likely than men to experience verbal abuse at work, whereas men are more likely to experience physical threats.⁴⁶

Age

Studies on unacceptable behaviour and age yield mixed results.¹ Younger adults are thought to be at greater risk of experiencing workplace violence,⁵ but, as with gender, such risk may be related to occupation.

Tenure

Less experienced workers have been found to be more likely to report receiving threats and being assaulted.⁴⁷

Occupational sector

Workers in certain occupational sectors are at higher risk of experiencing unacceptable behaviour than those in others. For example, Hubert & Van Veldhoven's study from the Netherlands found that workers in industry, education, local government and public administration were more prone than average to 'unpleasant situations with the boss and with colleagues', while in the healthcare sector only 'unpleasant behaviour by colleagues' was reported more than average.⁴⁸ The education sector was found to be a risk sector for bullying by Hubert & Van Veldhoven and in three out of four other studies cited in their paper.

1.4.5 Research into unacceptable behaviour at work and other outcomes

Bowling & Beehr's meta-analysis also provides evidence of the negative association between workplace harassment and organisational commitment (-0.36).³² Again, this is measured in the present study.

1.4.6 Research into moderators of the relationship between unacceptable behaviour and health and wellbeing

Moderator variables are factors that either attenuate or exacerbate an existing relationship. In the context of research into unacceptable behaviour, such variables are extremely important, as they may indicate ways in which employees may be protected or buffered from the negative effects of unacceptable behaviour at work. Bowling & Beehr³² call for future research that tests moderator variables. In particular, they draw out the importance of examining social support and autonomy, both of which are included in the present study.

Not everyone who experiences significant levels of unacceptable behaviour develops health problems. This has led to researchers recognising that personality and individual difference factors are important moderator variables to measure, although few studies have focused on the moderators of the experience of bullying (and other unacceptable behaviour).

Brousse *et al.*³⁷ highlight the importance of considering individual difference characteristics, concluding that 'neuroticism' affects unacceptable behaviour and its consequences. Bowling & Beehr³² also found that victim's negative affectivity (NA; an individual difference highly similar to neuroticism) could influence unacceptable behaviour in a number of ways (see NA below for more details).

1.4.7 Organisational context

Hogh *et al.*³⁶ highlight the need to consider the role of organisational climate in the unacceptable behaviour–health relationship. The present research considers social support and the work characteristics of autonomy and workload demands all as potential contextual moderators.

Social support

Van Emmerik, Euwema & Bakker⁴⁹ found that peer support buffered an unsafe climate (one in which threats of violence occur). Commitment to an organisation was reduced for those employees with low levels of peer support. (See also Hogh *et al.*³⁶)

Work characteristics

Other stressors might also contribute to the negative health impact of unacceptable behaviour in the workplace.³² In a hostile (or 'negatively ambient') work environment with the presence of various stressors (eg high workload demands, low autonomy), the negative impact of unacceptable behaviour may be exacerbated. For example, employees working in stressful environments may react and behave in ways that encourage others to victimise them or negative work environments may encourage perpetrators to engage in unacceptable or harassing behaviours.³² Autonomy was negatively related to workplace harassment (−0.25) in the Bowling & Beehr meta-analysis.

The present study makes a further contribution by examining a number of potential individual moderators.

Optimism

Individuals with high dispositional optimism tend to experience better mental and physical health.⁵⁰ Optimism may be one factor that protects against post-traumatic pathology following a violent episode.⁵¹ Little research in the unacceptable behaviour field has examined optimism as a moderator.

Resilience

Resilience refers to individual differences in coping and reacting to stressful and demanding situations.⁵² Personal resilience can be developed and strengthened to reduce vulnerability to workplace violence and bullying.⁵³ By promoting resilience, fewer people may develop psychological health issues as a result of unacceptable behaviour in the workplace.⁵⁴

Self-esteem

Einarsen *et al.*⁵⁵ found that self-esteem partially moderated the relationships between bullying and psychological, psychosomatic and musculoskeletal health complaints. These researchers found that those low in self-esteem reported more psychological and musculoskeletal complaints than those high in self-esteem.

Control variable – negative affectivity (NA)

The NA personality trait has long been considered a potential source of bias in research which measures stressors and strain outcomes,⁵⁶ which needs controlling for statistically. The present authors

are aware of the different arguments in the academic literature^{57,58} concerning the inclusion or exclusion of NA in stress research. They chose to control for NA in this study to guard against finding significant relationships between a range of unacceptable behaviours (viewed as stressors) and wellbeing outcomes; in other words, doing so makes the study more robust.

1.4.8 Previous interventions: research and potential practical implications

Social support is an obvious choice of means for intervening in workplace unacceptable behaviour; as it is the antithesis of the behaviour that is undermining the employee, it may be especially effective.³²

Hoel & Giga conducted the first study to evaluate the efficacy of bullying interventions.³ They tested three training interventions for managers, covering policy communication, stress management and negative behaviour awareness. The study was inconclusive about the efficacy of the interventions, but suggested that theoretically sound, well-planned and appropriately delivered interventions could help.

1.5 Rationale for study

There are three key underlying elements to the present study that form a strong rationale for conducting this research.

Firstly, there is not currently a good understanding of the negative and longer-term impact of violence, bullying and incivility on health and wellbeing. The research in this area is characterised by cross-sectional studies which provide no insight into causal mechanisms, which is critical for developing effective interventions.³⁸ Only by using a longitudinal design is it possible to begin to identify such mechanisms.

Secondly, the literature offers a very limited knowledge of what may work to limit the damage to health and wellbeing from the full range of unacceptable behaviours measured in this study. Thus, the present research also seeks to examine a number of factors which may moderate the impact of unacceptable behaviour in the workplace. This is done by measuring a number of important moderators in the study (eg social support, resilience, optimism).

Thirdly, this study aims to address some of the methodological weaknesses in previous research. Almost all the research in this domain has been conducted either in North America (with emphasis on extra-organisational sources) or in non-UK Europe (with an emphasis on intra-organisational sources) and it is unclear how these bodies of research relate to the UK workplace experience. It has also become evident that there is value in considering insider- and outsider-initiated unacceptable behaviour simultaneously;¹⁹ this is addressed in the study, as it is likely that the two different sources will require very different kinds of intervention strategy. Other methodological weaknesses in existing research have been a lack of clarity in the type of unacceptable behaviour being studied, a failure to take adequate baseline measures, and not recording prior personal exposure to unacceptable behaviour.⁵⁹ The present study addresses each of these by:

- breaking down the definition of unacceptable behaviour into three forms (violence, bullying and incivility)
- using the T1 measurement as the baseline
- asking participants at the T1 point to reflect on their experiences over the previous six months.

Barling *et al.*¹ suggested that future research on unacceptable behaviour would be profitably directed towards three general research needs. These were questions of:

- construct definition
- prevention and mitigation
- research methodology.

The present study aims to address all of these needs. Firstly, it is specific about the types of unacceptable behaviour measured and makes clear how they are broken down into violence, bullying and incivility. Secondly, by using a range of moderators, it seeks to examine how organisations can most effectively intervene to mitigate the effects of unacceptable behaviour. Thirdly, it uses a longitudinal design that Barling *et al.*¹ describe as a methodology belonging to the 'next generation' of studies in this area.

1.6 Study design

1.6.1 Longitudinal designs

Longitudinal designs allow examination of how effects change over time and are considered more powerful than cross-sectional designs (involving one measurement at one time point). Using longitudinal designs, researchers can follow multiple outcomes (and moderators) simultaneously over time to explore the validity of hypothesised causal chains of events.⁶⁰ As Shadish *et al.* state, 'Practical problems plague longitudinal designs'⁶⁰ (p. 267). One of the greatest threats to this type of research design is participant 'attrition', whereby participants leave the organisations they worked in or simply get tired of completing surveys. Longitudinal studies are also expensive to carry out, as a rule, and are extremely resource-intensive in terms of research time.

Despite these well-documented issues with this design, a cross-lagged longitudinal design was nevertheless chosen for this study because of the almost complete dearth of longitudinal research in the area of unacceptable behaviour.

1.6.2 Longitudinal designs: how do they work statistically?

Evidence for a causal relationship between variables X and Y can be found by regressing Y at Time 2 on X at Time 1 while simultaneously controlling for Y at Time 1. Any remaining variance that is explained in Y at Time 2 by X at Time 1 can be interpreted as showing that X causes Y.⁶¹ The present authors acknowledge that the cross-lagged method is not without its critics,⁶² but at the same time, there are many staunch advocates of the method (eg Locascio⁶³). By performing this analysis on the matched sample this study improves on the previous cross-sectional research in this area.

1.7 Research questions

The study focuses on four key research questions:

- What is the prevalence of bullying, violence and incivility in a large sample of diverse employees in the UK?
- What are the relationships between work-related violence, bullying and incivility events and wellbeing outcomes (eg mental strain) for employees?
- What are the most important moderators of these causal relationships?
- What are the most promising candidates for the development of successful interventions to limit the risks to employee health from work-related violence, bullying and incivility?

2 Method

2.1 Study design

Cross-sectional studies on the relationships between stressors and strains (in this case, unacceptable behaviour and health) are subject to common method variance issues. Hence, following the advice of Podsakoff *et al.*,⁶⁴ a temporal time-lag was introduced to combat common method variance. A quantitative survey method was employed, which used a cross-lagged longitudinal design (two-wave), with a temporal separation of approximately six months (T1 data were collected in July and August 2008 and T2 data in February and March 2009). In each instance, participants were asked about the previous six months.

2.2 Recruitment of organisations

Organisations were targeted in those sectors known to have issues with violence, especially from external sources – for example transport, emergency services and public administration.

In the initial phases of the study, the researchers worked with Sheffield University's media team to issue a press-release about the research. This led to several articles in local newspapers and interviews with members of the research team on local radio. As a result of this media publicity, several national organisations contacted the team about the research, including the producer of the BBC local news programme, the Health and Safety Executive (HSE) and the Suzy Lamplugh Trust.

The research team also used existing networks and made new contacts to gain access to as wide a range of relevant organisations as possible. For example they:

- made use of a new contact in the HSE who had strong links with the National Health Service (NHS), which led to another contact who managed a health and safety network in the NHS
- contacted directly those organisations that they especially wanted to collaborate with
- used the contacts of the university's Business Liaison Manager and attended University Corporate Partnership events
- used contacts made through students on the MSc occupational/work psychology programmes, of which the principal investigator is a co-director.

These concerted recruitment efforts in the early part of 2008 led to 10 organisations agreeing to participate in the two stages of data collection. T1 data were obtained from nine organisations. One organisation withdrew from the study at a late stage, principally because of the loss of two key contacts that the research team had spent time negotiating with.

2.3 Questionnaire development

The researchers spent several weeks identifying and sourcing existing measures that they wanted to include in the survey. Some of these existing measures had to have the response anchors repeated and adapted so that both internal and external sources of unacceptable behaviour could be captured. First, the unacceptable behaviour measures and the health outcome measures were addressed. This necessitated contacting researchers in Europe and North America for access to and permission to use full scales. Second, the potential moderators of the relationships between unacceptable behaviour and health outcomes were considered. In addition, key demographic and background details of employees were needed. A substantial amount of time was spent on cutting down the questionnaire to an acceptable size and on working on a way to get participants to self-generate a unique identifying code that would allow their data provided at T1 and T2 to be matched.

Once the researchers were satisfied with the overall content of the questionnaire, it was piloted on two distinct groups of individuals. The pilot participants were those who had contacted the team after reading about the study in the newspaper or hearing about it on the radio, along with some researchers at the Institute of Work Psychology (IWP). The volunteers were asked about the time it took them to complete the questionnaire, the ease of completion and whether they felt that any important aspects had been omitted. Following this process, more items and measures were removed and small changes were made. (Note that there were minor differences in the demographic sections in the different versions of the questionnaire sent to each organisation, to take account of differences they were keen to know about.)

2.4 Questionnaire items and measures

2.4.1 Demographics and other background information

Participants were asked their age, gender and ethnic origin. In addition, they were asked about their highest level of educational achievement, the name of their organisation, the sector they believed their organisation best fitted into, the length of time they had worked there, their job title and their organisational level (eg employee or senior manager). They were also asked to indicate the time they spent working either alone, with external people (ie customers or clients) or with colleagues. Participants were asked to indicate the number of hours they worked in a typical week, their typical work patterns and whether they were union members (or indeed representatives) and of which union.

Finally, this first section of the questionnaire asked about participants' training on dealing with unacceptable behaviour, whether their organisation had an incident reporting system and whether they were aware of any other organisational policies on unacceptable behaviour.

2.4.2 Measures of unacceptable behaviour at work

A comprehensive approach was taken to measuring unacceptable behaviour in the workplace. Three separate scales were used and each act was examined as perpetrated by people internal and external to the organisation. Taken together, these scales cover a range of behaviours from acts of physical violence (being hit, kicked, grabbed, shoved or pushed) to lower level acts of incivility (being put down or condescended to). The scales used were as follows:

- for violence, the Violence at Work Scale³⁰
- for bullying, the Negative Acts Questionnaire⁹
- for incivility, the Workplace Incivility Scale.¹⁸

2.4.3 Mental and physical health measures

As with the unacceptable behaviour measurement, a comprehensive approach was again used. The following aspects were measured:

- work-related mental health, including anxiety and depression⁶⁵
- emotional exhaustion, using items from the Maslach Burnout Inventory⁶⁶
- post-traumatic stress symptoms, using items from the Impact of Events Scale⁶⁷
- general mental strain, using the General Health Questionnaire (GHQ-12)⁶⁸
- physical health, using the Physical Health Questionnaire⁶⁹
- self-reported sick leave – a one-item measure asking about days off work in the previous six months.

2.4.4 Moderator measures

As mentioned in Section 1, one of the research questions was concerned with the moderators of the potential causal relationships between unacceptable behaviour and health. The following is a simple list of the moderators measured; full details are available in Appendix 1:

- workload demands⁷⁰
- work autonomy^{71,72}
- social support (O'Hara,⁷³ which was based on Caplan *et al.*⁷⁰)
- management support (O'Hara,⁷³ which was based on Caplan *et al.*⁷⁰)
- optimism, using the Life Orientation Test (LOT)⁷⁴ as an optimism subscale of the PsyCap questionnaire (PCQ)⁷⁵
- resilience⁷⁶ – used as a resilience subscale of the PCQ⁷⁵
- self-esteem⁷⁷
- negative affectivity⁷⁸

2.5 Procedures for questionnaire administration

Different procedures were used depending on whether organisations had agreed to use online or paper versions of the questionnaire.

2.5.1 Online administration

The organisations opting to use the online questionnaire were given either an electronic link that could be embedded in an email circulated to participating staff or a link that could go on a webpage. Some organisations used both.

The online administration process was supported by detailed information about the survey. Organisations were contacted weekly with information about the number of responses we were receiving during the survey weeks (usually a four-week period). In addition, the research team followed up any questions and problems that employees had with completing the survey.

2.5.2 Paper administration

Paper questionnaires were delivered, posted and collected by the organisations themselves. The researchers were unable to spend time at these organisations in a way that would have supported the survey administration; there is little doubt that this had some implications for the number of data collected via this method.

2.6 Procedures for analysis

The data were downloaded from the online data collection system and put into SPSS Version 15. The small number of pen and paper data were coded, entered by hand and again put into SPSS.

3 Results: sample characteristics (T1 data only)

3.1 Completion rates and response rates

For T1, in July and August 2008, data were obtained from nine organisations. With online methods it is difficult to calculate accurate response rates as it is not always clear how many people have been reached with the survey link. Table 1 shows the number of employees who started the questionnaire, those that completed and a percentage completion rate. Table 2 shows the number of pen and paper questionnaires provided, those that returned it and response rate.

Table 1
Online returns

Self-reported sectors		Started	Completed	Completion rate (%)
1 Public sector – multiple organisations	T1	2505	1372	54.8
2 Health sector	T1	402	218	54.2
3 Education sector	T1	217	119	54.8
4 Public administration	T1	144	81	56.2
5 Emergency service (1)	T1	153	68	44.4

Table 2
Paper returns

Self-reported sectors		Provided	Returned	Response rate (%)
6 Emergency service (2)	T1	1400	107	7.6
7 Transport and communication (1)	T1	100	92	92.0
8 Utilities	T1	200	52	26.0
9 Transport and communication (2)	T1	720	48	6.7

The total sample size at T1 was 3,652. Response rates were low but this is to be expected when conducting research on sensitive topics such as unacceptable behaviour.⁷⁹ The total sample size at T2 was 2,029.

3.2 Sectors of study organisations at T1

The original sample of employees at T1 was spread across a variety of organisational sectors. The largest percentage was drawn from a large public sector body that had employees in numerous government departments spread across the UK. The second largest percentage came from the health and social work sector.

As Table 3 shows, 85 per cent of respondents reported themselves to be employed in one of three sectors, namely public administration and defence, health and social work, and education.

3.3 Organisational level of respondents at T1

Sixty-nine percent of respondents classed themselves as being at employee level in their organisations, with the minority classified as senior management and other (see Table 4).

3.4 Age of study participants

The average age of employees in the study was 43 years and 6 months.

3.5 Gender composition of sample

At T1, 63 per cent of the sample were female and 37 per cent male.

3.6 Ethnic origin of sample

As shown in Table 5, the majority (92 per cent) of respondents categorised themselves as white.

3.7 Highest level of education

The highest educational attainment level of respondents is shown in Table 6. The majority (74 per cent) of respondents were educated to A-level or above.

Organisational sector	Total respondents	
	Number	%
Public administration and defence	1594	54.8
Health and social work	462	15.9
Education	394	13.5
Other community and social, eg emergency services	268	9.2
Transport and communication	99	3.4
Utilities	52	1.8
Financial services	31	1.1
Real estate and business	11	0.4
Total	2911	100.1
Missing data	737	
Total	3652	

Table 3
Distribution of respondents by organisational sector (self-reported)

Organisational level	Total respondents	
	Number	%
Employee	1993	69.1
Middle manager	735	25.5
Senior manager	79	2.7
Other	77	2.7
Total	2884	100.0
Missing data	768	
Total	3652	

Table 4
Distribution of respondents by organisational level

Ethnic origin	Total respondents	
	Number	%
Asian	108	3.7
Black	45	1.5
White	2693	92.2
Other	74	2.5
Total	2920	99.9
Missing data	732	
Total	3652	

Table 5
Distribution of respondents by ethnic origin

Table 6
Distribution of
respondents by
educational level

Educational level	Total respondents	
	Number	%
None	72	2.5
GCSE	679	23.2
A-level	946	32.4
Undergraduate degree	732	25.0
Postgraduate degree	494	16.9
Total	2923	100.0
Missing data	729	
Total	3652	

3.8 Tenure in organisation

The average organisational tenure was 14 years 6 months.

3.9 Hours worked and work patterns

The average number of hours worked per week was 37 (standard deviation = 7.09).

3.10 Work patterns

Fifty-nine per cent worked standard hours (Monday to Friday, 09.00–17.00) and 41 per cent reported they worked other work patterns (ie non-standard hours).

3.11 Union membership

Seventy-four percent of participants were members of a union and 16 per cent reported they were union representatives. The remaining 10 per cent said they were not union members.

3.12 Training to deal with unacceptable behaviour

Sixty per cent of respondents reported that they had attended training about dealing with unacceptable behaviour from either customers or colleagues. Eighty-six percent of these said that this training had been provided by the organisation they currently worked for.

3.13 Reporting systems for unacceptable behaviour

Ninety-two percent reported that their organisation had a system for reporting unacceptable behaviour from either customers or colleagues. Forty-one percent said that they had used this system.

3.14 Other organisational policies about unacceptable behaviour

Sixty-six percent reported that their organisation had other policies about unacceptable behaviour.

3.15 Summary of sample characteristics

The majority of respondents were from the public administration and health and social work sectors. There was good representation from education and emergency services as well. Most of the participants reported that they were at employee level, but again there is good representation of middle managers. On average, participants were 43–44 years old and are more likely to be female and white. Seventy-three percent have qualifications above GCSE level, and the average participant has been with their current organisations approximately 14–15 years. Most work 37 hours a week but just over 40 per cent work non-standard hours. The majority are union members, and have been trained to deal with unacceptable behaviour by their current organisation.

4 Results: prevalence of violence, bullying and incivility

4.1 Prevalence calculations

There is considerable debate about the best way to calculate prevalence rates of unacceptable behaviour, given the large differences reported in the academic literature (for example, see papers by Coyne *et al.*,¹⁵ Nielsen *et al.*⁸⁰ and Notelaers *et al.*⁸¹). For this study, the researchers chose to dichotomise responses to each item according to whether it was experienced frequently or infrequently, based on earlier research into the prevalence of unacceptable behaviour, in particular about the prevalence of bullying (eg Einarsen & Raknes,⁹ Vartia⁸² and Zapf *et al.*¹²).

To compute overall prevalence scores of violence, bullying and incivility, responses were therefore recoded into two categories of 'frequent' and 'infrequent'. Response categories of 'never', 'now and then' and 'monthly' were combined into the 'infrequent' category. The response categories of 'weekly' and 'daily' comprised the 'frequent' category. Using acts experienced weekly or more often as a cut-off for 'frequent' exposure is typical in bullying research. For example, Leymann⁸³ defines victims of bullying as those who report being subjected to negative acts on a weekly or daily basis.

Thus, the method used in the present research (after Leymann⁸³) defines the victim group as those respondents who report being subjected to at least one negative act specified in the inventory on a weekly or daily basis for a period of six months. Acts that happen once a week or more often are coded as '1 = act', whereas all other frequencies are coded as '0 = no act'. Recoded items were then summed to compute a single overall prevalence score aligned with the number of items on that particular scale. For example, if someone answered 'infrequent' ('never', 'now and then' or 'monthly') to all 22 negative acts (bullying), they would have an overall score on zero and would not be considered a victim of bullying. The same method is used for both violence and incivility.

Experienced unacceptable behaviour and source	Total respondents reporting 'frequent' acts	
	Number	%
Violence from inside (<i>n</i> = 2256)	84	3.7
Violence from outside (<i>n</i> = 2118)	220	10.4
Bullying from inside (<i>n</i> = 2250)	881	39.2
Bullying from outside (<i>n</i> = 2096)	357	17.0
Incivility from inside (<i>n</i> = 2269)	379	16.7
Incivility from outside (<i>n</i> = 2108)	150	7.1

Table 7
Percentage of respondents reporting 'frequent' experience of unacceptable behaviour over a six-month period. 'Frequent' is a combination of 'weekly' and 'daily'

4.1.1 Violence

Ten per cent of respondents reported experience violence from sources external to their workplace. This is similar to the reported 6 per cent of the workforce (in a nationally representative probability sample of US workers) who reported incidents of physical violence over a 12-month period.⁵ The least reported unacceptable behaviour is violence from inside organisations, at 4 per cent.

4.1.2 Bullying

The most frequently reported unacceptable behaviour is bullying from inside organisations (39 per cent of respondents). This figure is almost identical to the 39.6 per cent reported by Coyne *et al.*¹⁵ Like Coyne *et al.*, the present authors advocate caution in citing and interpreting this figure without considering how was calculated. However, part of Coyne *et al.*'s justification for suggesting that 39.6 per cent was an overestimation of the rates of victimisation was that it was much higher than rates in previous studies. Obviously, the present report is an additional study with a 39 per cent prevalence rate based on a sample size many times larger than the Coyne *et al.* study (*n* = 288). Also, this is still lower than Einarsen & Raknes⁹ finding that 75 per cent of Norwegian engineering employees reported experiencing at least one incident of general harassment during the previous six months.

In a recent paper by Nielsen *et al.*⁸⁰ on the prevalence of bullying in Norway, there is a useful table showing a selection of prevalence rates across 13 different countries. Furthermore, there are several studies reported in that paper that can be compared against the present study's prevalence rate of 39

per cent. For example, a Danish study by Agervold⁸⁴ reports a prevalence of 26.9 per cent (over six months); a Turkish study by Bilgel, Aytac & Bayram⁸⁵ reports 55 per cent (over 12 months); and a US study by Schat *et al.*⁵ reports 41.4 per cent (over 12 months).

In conclusion, the findings of the present study are similar to those of both Coyne *et al.*¹⁵ in the UK and Schat *et al.*⁵ study in the US. It must be remembered, though, that the current study found a 39 per cent prevalence rate over a shorter period than that of Schat *et al.*

4.1.3 Incivility

Seventeen per cent of respondents reported being the victim of incivility from sources inside their organisation on a daily and weekly basis over the previous six months. A lower figure of 7 per cent reported frequent experience of incivility at work from sources outside their organisation.

These findings are similar to previous prevalence research. Pearson & Porath⁸⁶ found that at least 20 per cent of the people they surveyed were direct targets of incivility at work at least once per week. Cortina *et al.*¹⁸ studied the prevalence of incivility over a five-year period and found that 25 per cent experienced incivility 'sometimes' and 6 per cent 'often' or 'many times'.

4.1.4 Summary of prevalence statistics

A substantial number of participants in the study reported that they experience bullying and incivility from sources within their own organisations. Far fewer respondents were subjected to violence with an external origin.

The findings of the present study on violence agree with those of Schat *et al.*,⁵ who state that the vast majority of such acts do originate externally. The variation in frequency of reporting across the three types of unacceptable behaviour and also between internal and external sources adds weight to the present authors' decision to examine unacceptable behaviour in this fine-grained way.

5 Results: differences in the prevalence of unacceptable behaviour by sector, role, gender and educational level

5.1 Background

A series of cross-tabulated Pearson's chi-square analyses was used to examine differences in the prevalence of violence, bullying and incivility between:

- organisational sectors (note: the authors caution against reading too much into these data, as in many cases a single organisation represents a sector)
- job roles
- males and females
- education levels.

This allowed any significant differences to be explored between participants across the three different kinds of unacceptable behaviour (from inside and outside the workplace). The following analyses are on the overall sample at T1 data collection. For Pearson's chi-square analyses with cells with expected counts of less than 5, exact significance tests were performed and the results are reported as exact *p* values throughout.

Furthermore, the Pearson's chi-square analyses used to explore sector differences all had between five and eight cells with expected counts of less than 5. There was insufficient memory on the statistical package SPSS to perform exact significance tests. Therefore the statistical significances reported in the 'sector prevalence' section are based on Pearson's chi-square (unadjusted for exact *p* values).

5.2 Sector differences in self-reported prevalence of unacceptable behaviour

Table 8 shows the percentage of respondents reporting frequent unacceptable behaviour, displayed by self-reported organisational sector.

Self-reported organisational sector	Violence from inside	Violence from outside	Bullying from inside	Bullying from outside	Incivility from inside	Incivility from outside
Public administration and defence	32 3% (1157)	102 10% (1072)	487 42% (1163)	169 16% (1069)	224 19% (1172)	71 7% (1071)
Health and social work	17 5% (351)	45 13% (353)	109 31% (352)	71 21% (347)	54 15% (353)	29 8% (349)
Education	2 1% (285)	1 0.4% (265)	87 31% (352)	11 4% (265)	27 9% (287)	2 0.8% (265)
Other community and social, eg emergency services	15 7% (217)	34 16% (207)	104 48% (217)	41 20% (209)	32 15% (219)	15 7% (207)
Transport and communication	6 7% (88)	20 23% (87)	29 34% (87)	28 33% (86)	10 11% (88)	14 16% (87)
Utilities	4 9% (47)	12 25% 48	15 32% (47)	20 44% (46)	9 19% (48)	10 21% (47)
Financial services	0 0% (10)	0 0% (8)	3 27% (11)	0 0% (8)	1 10% (10)	0 0% (8)

Table 8
Percentage of respondents reporting 'frequent' unacceptable behaviour by organisational sector. 'Frequent' is a combination of 'weekly' and 'daily'

Notes

The highest frequency for each behaviour is in **bold**.

Groups with fewer than 10 respondents on all scales were omitted from the table.

5.2.1 Violence

There were some differences between sectors, in relation to both violence from inside the organisation ($\chi^2(8, N = 2,161) = 24.637, p = 0.002$) and outside ($\chi^2(9, N = 2,046) = 66.832, p = 0.000$). Again, the utilities reported the most frequent experience of violence (9 per cent from inside, 25 per cent from outside); on the other hand, there were substantially lower prevalences in financial services (0 per cent from inside and outside) and education (1 per cent inside, 0.4 per cent outside). These differences and associations were of low statistical strength ($\Phi = 0.107$ inside prevalence, and $\Phi = 0.181$ outside prevalence).

5.2.2 Bullying

From Table 8 it can be seen that the most frequent unacceptable behaviour reported was bullying from inside the organisation (48 per cent). Five of the six highest reported frequencies of unacceptable events are in the utilities sector; this included employees whose main role was debt collection.

Several differences were found between sectors in the prevalence of bullying from inside the organisation ($\chi^2(8, N = 2,167) = 33.572, p = 0.000$). The 'other community, social and emergency services' sector reported the most (48 per cent), with financial services reporting the fewest (27 per cent); however the associations were of low strength ($\Phi = 0.124$).

Associations were also found between sectors in the prevalence of bullying from outside organisations ($\chi^2(9, N = 2,036) = 85.819, p = 0.000$), but were low in statistical strength ($\Phi = 0.205$). The utilities sector reported considerably more bullying from outside the organisation than the other sectors (44 per cent); again, this may reflect the inclusion of employees whose main role was debt collection. Financial services and education reported the least bullying from outside the organisation (0 and 4 per cent respectively).

5.2.3 Incivility

Incivility from inside the organisation was joint highest in the public administration and defence sector (multiple public sector organisations were included in this sector) and the utilities sector (19 per cent). The education and financial services sectors reported the least incivility from inside the organisation (9 and 10 per cent respectively). These apparent differences were statistically significant ($\chi^2(8, N = 2,183) = 19.713, p = 0.011$), but were low in strength ($\Phi = 0.095$).

There were also some differences between organisational sectors with respect to experiencing incivility from outside the organisation ($\chi^2(9, N = 2,040) = 57.361, p = 0.000$). Utilities reported more incivility from outside (21 per cent) compared to the other sectors. Again, both financial services and education reported the least incivility (0 and 0.8 per cent from outsiders respectively). The strength of these apparent associations is, however, low ($\Phi = 0.168$).

A survey of public sector workers in the US found that 71 per cent of respondents reported at least some experience of workplace incivility during the previous five years and 6 per cent reported experiencing such behaviour many times;¹⁸ the findings of the present study over a previous six-month period are somewhat commensurate.

5.3 Gender differences in unacceptable behaviour

For both men and women, by far the most frequently reported unacceptable behaviour was bullying from inside organisations, with 39 per cent of both genders reporting frequent experiences. The least commonly reported type of unacceptable behaviour was violence from inside organisations, with 3 per cent of women and 4 per cent of men reporting frequent experience.

Table 9
Gender differences
in self-reported
'frequent' exposure
to unacceptable
behaviour.
'Frequent' is a
combination of
'weekly' and 'daily'

Gender	Violence from inside	Violence from outside	Bullying from inside	Bullying from outside	Incivility from inside	Incivility from outside
Female	43 3% (1379)	108 8% (1291)	533 39% (1383)	191 15% (1288)	226 16% (1391)	85 7% (1287)
Male	33 4% (789)	106 14% (759)	306 39% (790)	152 20% (752)	132 17% (796)	56 7% (757)

Note: The highest frequency for each behaviour is in **bold**.

There were some significant differences between males and females with respect to experiencing unacceptable behaviour that originated from outside the organisation. First, men reported more bullying from outside organisations than women ($\chi^2(1, N=2,040)=9.839, p=0.002$), although the strength of the association was low ($\Phi=0.069$). Second, men reported experiencing more violence from outside their organisations than women ($\chi^2(1, N=2,050)=16.034, p=0.000$), although the association was of similarly low strength ($\Phi=0.088$).

Such findings concur with those of Zapf *et al.*⁴¹ and Schat *et al.*⁵ Zapf *et al.* conclude there is little evidence that women are more at risk because of the socialisation processes that women undergo (conditioning them to become, for example, less assertive and less aggressive). Schat *et al.* find that men are more at risk of violence but note that this has to be tempered by the nature and source of the violence and the respondent's occupation.

5.4 Role differences in self-reported prevalence of unacceptable behaviour

The most frequently reported unacceptable behaviour was bullying from inside organisations, with 39 per cent of employee-level participants reporting daily or weekly bullying. They were closely followed by middle management (38 per cent) (see Table 10). There were some significant differences between employees and both middle and senior management with respect to experiencing unacceptable behaviour at work. (Note: In this section a distinction is drawn between employees, middle managers and senior managers. Elsewhere in this report, the term 'employees' is used to cover all three.)

Role	Violence from inside	Violence from outside	Bullying from inside	Bullying from outside	Incivility from inside	Incivility from outside
Employee	54 4% (1479)	168 12% (1401)	576 39% (1481)	278 20% (1393)	251 17% (1491)	118 9% (1395)
Middle management	16 3% (536)	33 7% (502)	205 38% (538)	45 9% (502)	76 14% (540)	15 3% (501)
Senior management	1 2% (61)	1 2% (61)	11 18% (62)	1 2% (61)	6 10% (62)	0 0% (61)

Table 10
Organisational level differences in self-reported 'frequent' exposure to unacceptable behaviour. 'Frequent' is a combination of 'weekly' and 'daily'

Notes

The highest frequency for each behaviour is in **bold**.
The 'other' category was omitted from the table.

5.4.1 Violence

While there were no significant differences between organisational level and experience of violence from inside organisations, differences were found regarding violence from outside ($\chi^2(3, N=2,021)=19.6730, p=0.000$). The strength of the association between different organisational levels and violence from outside was low ($\Phi=0.099$).

5.4.2 Bullying

Employee-level participants reported more bullying from inside the organisation than their management counterparts ($\chi^2(3, N=2,141)=15.814, p=0.001$), but the strength of the association was low ($\Phi=0.086$). Employees also reported experiencing more bullying from outside their organisation compared to both middle and senior management ($\chi^2(3, N=2,012)=45.900, p=0.000$), although again the association is of low strength: $\Phi=0.151$.

5.4.3 Incivility

There were also some differences between organisational level and incivility. Employees reported more incivility than managers, from both inside their organisations ($\chi^2(3, N=2,156)=9.562, p=0.023$) and outside ($\chi^2(3, N=2,015)=23.948, \text{exact } p=0.000$). The strength of the association between organisational level and incivility were low for both inside and outside incivility: $\Phi=0.067$ and $\Phi=0.109$ respectively.

In conclusion, employee-level participants report significantly more violence, bullying and incivility than middle and senior managers. The differences concerning unacceptable behaviour from outside

are probably a strong reflection of customer/client-facing aspects of their roles. Typically, middle and senior managers are more removed from dealing with customers, clients and patients face to face. Aquino speculates that 'potential perpetrators may refrain from harming high-ranking co-workers because they fear reprisals' (p. 176).⁸⁷ Aquino further discusses the possibility of high-status employees being 'insulated from victimization' (p. 176), because of the beneficial value of treating 'power' with respect (see Tripp⁸⁸).

5.5 Educational level differences in unacceptable behaviour

Table 11 illustrates the differences between the education level of respondents and the frequency with which they experience unacceptable behaviour in the workplace.

Table 11
Educational level differences in self-reported 'frequent' exposure to unacceptable behaviour. 'Frequent' is a combination of 'weekly' and 'daily'

Highest educational level	Violence from inside	Violence from outside	Bullying from inside	Bullying from outside	Incivility from inside	Incivility from outside
None	3 6% (55)	8 15% (55)	11 20% (55)	13 23% (55)	5 9% (55)	7 13% (55)
GCSE	19 4% (479)	64 14% (451)	177 37% (477)	79 18% (449)	62 13% (484)	37 8% (451)
A-level	35 5% (716)	95 14% (669)	303 42% (719)	129 19% (665)	140 19% (724)	54 8% (664)
Undergraduate degree	10 2% (552)	30 6% (530)	211 38% (556)	85 16% (530)	89 16% (559)	25 5% (531)
Postgraduate degree	7 2% (370)	14 4% (334)	131 37% (356)	35 11% (331)	59 17% (356)	18 5% (333)

Note: The highest frequency for each behaviour is in **bold**.

5.5.1 Violence

Significant differences can also be seen in the prevalence of violence from insiders ($\chi^2(4, N = 2,158) = 12.364$, exact $p = 0.016$) and outsiders ($\chi^2(4, N = 2,039) = 45.123$, $p = 0.000$); the strength of these associations was low ($\Phi = 0.076$ and $\Phi = 0.149$ respectively). Employees with no qualifications reported the most violence, closely followed by those with GCSEs and A-Levels; those with university degrees reported the least violence from both inside and outside organisations.

5.5.2 Bullying

By far the most frequently reported unacceptable behaviour was bullying from inside organisations, with similar frequencies showing for those with GCSEs (37 per cent), A-Levels (42 per cent), undergraduate degrees (38 per cent) and postgraduate qualifications (37 per cent); those with no qualifications reported the lowest frequency on this type of behaviour (20 per cent). These differences in reported frequency were statistically significant ($\chi^2(4, N = 2,163) = 12.874$, $p = 0.012$), although the strength of the association was low: $\Phi = 0.077$.

In contrast, employees with no qualifications reported the highest occurrence of bullying from outsiders (23 per cent), compared to employees educated to GCSE level or above. Differences between education level and bullying from outsiders were significant ($\chi^2(4, N = 2,030) = 14.655$, $p = 0.005$), but the associations were of low strength ($\Phi = 0.085$).

5.5.3 Incivility

There were some differences between education levels in relation to incivility that originates inside organisations ($\chi^2(4, N = 2,178) = 11.390$, $p = 0.023$). Employees qualified to A-Level reported the most incivility from inside organisations (19 per cent), which was closely followed by postgraduates (17 per cent) and undergraduates (16 per cent). Those with no qualifications reported experiencing the least incivility from insiders (9 per cent). It is important to note, however, that the strength of these apparent differences and associations was low ($\Phi = 0.072$).

Those with no qualifications reported the most frequent experience of incivility from outsiders (13 per cent), with those educated to degree level (both undergraduates and postgraduates) reporting the least (5 per cent). The association between education level and differing levels of incivility from outside organisations was significant ($\chi^2(4, N = 2,034) = 10.751$, exact $p = 0.030$), although, again, the strength of the association was low ($\Phi = 0.073$).

In conclusion, four out of six of the highest reported frequencies of unacceptable behaviour events are reported by those with no educational qualifications. Three of the four kinds of unacceptable behaviour most often reported by those with no qualifications originate from organisational outsiders. This may reflect the fact that workers with no qualifications are likely to work in particular occupations, such as public transport, where they are mostly alone or not working with colleagues.

5.6 Summary of section

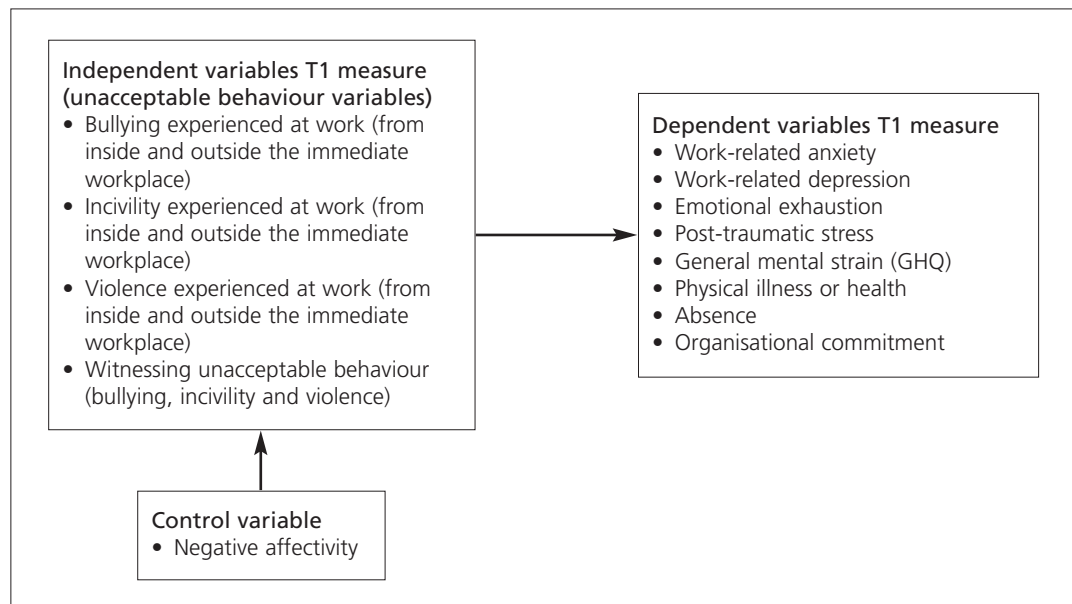
Violence from inside the organisation is consistently the least (or joint least) reported kind of unacceptable behaviour across all prevalence analyses. Bullying that originates from inside the organisation is consistently the most frequently reported type of unacceptable behaviour across all prevalence analyses performed. In this sample, employees in the utilities sector appear to be more at risk of experiencing all kinds of unacceptable behaviour at work except for bullying from internal sources. However, caution is needed in interpreting this latter finding as it is derived from just a few employees from one utility company.

6 Results: cross-sectional main effects analyses on T1

6.1 Background

An initial analysis was carried out on the T1 cross-sectional data as there was a large number of data across all sectors in the study. Using a series of hierarchical regression analyses, the cross-sectional associations of the predictor (dichotomised independent) variables (violence, bullying, incivility and witnessing unacceptable behaviour) measured at T1 were examined against the outcome (dependent) variables (work-related anxiety, work-related depression, emotional exhaustion, post-traumatic stress symptoms, general mental strain (GHQ-12), physical ill health, absence and organisational commitment measured at T1 (see Figure 2).

Figure 2
Cross-sectional
main effects model



A total of 3,388 people participated in T1 surveys and gave complete identification numbers. From that sample, 169 ‘matched’ people were removed before the analysis. Note: ‘matched’ people are those employees who completed both surveys, while ‘non-matched’ people completed only one questionnaire. Not all of the participants fully completed every item on the questionnaire; each analysis is based on a different number of participants, ranging from 784 (for absence) to 1,558 (single item self-esteem), with the majority of analyses including approximately 1,440 participants.

6.2 Rationale for cross-sectional analysis

Given that there was a smaller number of ‘matched’ participants (ie those who completed both T1 and T2 of the survey) than had been expected, the findings presented here are based on the key study variables from the larger cross-sectional dataset at T1. Obviously, a larger dataset gives greater statistical power and more interesting and useful findings.

6.3 Preliminary data procedures

As with the matched analysis, a series of preliminary data procedures was performed. Firstly, the correlations between the key independent variables were examined to check that each variable was contributing uniquely to the analysis (a multi-collinearity check); no violations were evident.

The second check was to ascertain whether any of the background variables needed to be controlled for in the main analysis. A series of UNIANOVAs were performed with the categorical background variables (union, level of education, organisation, job level within organisation, work pattern and ethnicity) to establish whether any of them consistently related to the outcome variables of interest. The continuous and dichotomous background variables (age, gender, hours worked and tenure), were then explored with a correlation analysis (see Appendix 1). The following variables were found to relate consistently and significantly to the health and wellbeing outcome variables:

- gender
- hours worked per week
- tenure

- organisation
- union.

Dummy coding was then performed on the 'organisation' and 'union' variables before the main analyses, as each consisted of more than two categorical options.

A separate correlation analysis revealed that the negative affectivity variable highly correlated with all the outcome variables (see Appendix 1). It was therefore again necessary to control for negative affectivity. Correlations were then performed between all seven key independent variables and all the outcome variables (see Appendix 1). This was to identify the predictor variables that significantly correlate with each outcome variable; only these were subsequently included in the main analyses (this action was taken for consistency with the cross-lagged analysis). Following these pre-analysis checks, the data were ready for the next analysis phase.

6.4 Is unacceptable behaviour in the workplace associated with health and wellbeing?

A series of hierarchical multiple regression analyses was performed with each health or wellbeing outcome variable in turn. For each analysis, the effects of gender, hours worked per week, tenure, organisation and union were controlled for, in Steps 1–4. In Step 5, those key unacceptable behaviour predictors were added that significantly correlated with the outcome variable in question. Table 12 summarises the findings of the multiple regressions performed for the eight separate health and wellbeing variables.

Unacceptable behaviour predictors	Dependent variables							
	Work-related anxiety	Work-related depression	Emotional exhaustion	Post-traumatic stress	General mental strain (GHQ)	Physical illness	Absence	Organisational commitment
Bullying inside organisation	0.159**	0.212**	0.178**	0.194**	0.161**	0.075**	–0.036	–0.171**
Bullying outside organisation	0.037	0.033	0.043	0.048	–0.008	0.066*	~	0.011
Incivility inside organisation	0.100**	0.107**	0.082**	0.124**	0.096**	0.068**	0.119**	–0.034
Incivility outside organisation	–0.014	–0.031	–0.026	0.029	0.006	–0.030	~	0.018
Violence inside organisation	–0.003	0.022	–0.035	–0.001	0.011	–0.022	~	–0.002
Violence outside organisation	–0.003	0.008	0.044	–0.002	–0.020	0.070**	~	~
Witnessing unacceptable behaviour	0.118**	0.083**	0.178**	0.096**	0.072**	0.052*	–0.008	–0.113**
R ²	0.549	0.561	0.482	0.449	0.558	0.376	0.057	0.286
Δ R ²	0.075**	0.092**	0.110**	0.102**	0.056**	0.034**	0.010*	0.054**

* $p < 0.05$

** $p < 0.01$

~: not tested

Table 12

Cross-sectional main effects: standardised regression weights and R² values for predicting each measure of wellbeing using bullying, incivility and violence as predictors (T1)

Several observations can be made from the information in Table 12.

Higher levels of work-related anxiety are associated with frequent bullying from inside the organisation, frequent incivility from inside the organisation and frequently witnessing unacceptable behaviour at work. The ΔR^2 value indicates that the unacceptable behaviour predictor variables accounted for an additional 7.5 per cent of variance in work-related anxiety ($\Delta R^2 = 0.075$). The total amount of variance explained by the final model is 54.9 per cent, ($R^2 = 0.549$). The strongest unacceptable behaviour predictor of work-related anxiety is frequent bullying at work by someone inside the organisation (colleagues, subordinates or superiors).

Higher levels of work-related depression are associated with frequent bullying from inside the organisation, frequent incivility from inside the organisation and frequently witnessing unacceptable behaviour at work. The ΔR^2 value indicates that the unacceptable behaviour predictor variables accounted for an additional 9.2 per cent of variance in work-related depression ($\Delta R^2 = 0.092$). The total variance explained by the final model is 56.1 per cent, ($R^2 = 0.561$). The strongest unacceptable behaviour predictor of work-related depression is frequent bullying at work by someone inside the organisation (colleagues, subordinates or superiors). This finding supports those of Kivimäki *et al.*^{34,35}

Higher levels of emotional exhaustion are associated with frequent bullying from inside the organisation, frequent incivility from inside the organisation and frequently witnessing unacceptable behaviour at work. The ΔR^2 value indicates that the unacceptable behaviour predictor variables accounted for an additional 11 per cent of variance in emotional exhaustion ($\Delta R^2 = 0.110$). The total amount of variance explained by the final model is 48.2 per cent ($R^2 = 0.482$). The strongest unacceptable behaviour predictors of emotional exhaustion are jointly frequent bullying at work by someone inside the organisation (colleagues, subordinates or superiors) and frequently witnessing unacceptable behaviour at work.

Higher levels of post-traumatic stress symptoms are associated with frequent bullying from inside the organisation, frequent incivility from inside the organisation and frequently witnessing unacceptable behaviour at work. The ΔR^2 value indicates that the unacceptable behaviour predictor variables accounted for an additional 10.2 per cent of variance in post-traumatic stress ($\Delta R^2 = 0.102$). The total amount of variance explained by the final model is 44.9 per cent ($R^2 = 0.449$). The strongest unacceptable behaviour predictor of post-traumatic stress symptoms is frequent bullying at work by someone inside the organisation (colleagues, subordinates or superiors).

Higher levels of general mental strain (as measured by the GHQ) are associated with frequent bullying from inside the organisation, frequent incivility from inside the organisation and frequently witnessing unacceptable behaviour at work. The ΔR^2 value indicates that the unacceptable behaviour predictor variables accounted for an additional 5.6 per cent of variance in GHQ ($\Delta R^2 = 0.056$). The total amount of variance explained by the final model is 55.8 per cent ($R^2 = 0.558$). The strongest unacceptable behaviour predictor of general mental strain is frequent bullying at work by someone inside the organisation (colleagues, subordinates or superiors).

Higher levels of physical illness are associated with frequent bullying from inside the organisation, frequent bullying from outside the organisation, frequent incivility from inside the organisation, frequent violence from outside the organisation and frequently witnessing unacceptable behaviour at work. The ΔR^2 value indicates that the unacceptable behaviour predictor variables accounted for an additional 3.4 per cent of variance in PHQ or physical illness ($\Delta R^2 = 0.034$). The total amount of variance explained by the final model is 37.6 per cent ($R^2 = 0.376$). The strongest unacceptable behaviour predictor of physical illness is frequent bullying at work by someone inside the organisation (colleagues, subordinates or superiors).

High levels of absence are associated with frequent incivility at work from someone inside the organisation (colleagues, subordinates or superiors) – this is the only unacceptable behaviour predictor of absence. The ΔR^2 value indicates that the unacceptable behaviour predictor variables accounted for an additional 1 per cent of variance in absence ($\Delta R^2 = 0.010$). The total amount of variance explained by the final model is 5.7 per cent ($R^2 = 0.057$).

Lower levels of organisational commitment are associated with: frequent bullying from inside the organisation and frequently witnessing unacceptable behaviour at work. The ΔR^2 value indicates that the unacceptable behaviour predictor variables accounted for an additional 5.4 per cent of variance in organisational commitment ($\Delta R^2 = 0.054$). The total amount of variance explained by the final model

is 28.6 per cent ($R^2 = 0.286$). The strongest predictor of (lack of) organisational commitment is frequent bullying at work by someone inside the organisation (colleagues, subordinates or superiors).

6.5 Summary of section

The most consistent predictors of the health and wellbeing outcomes are bullying from inside the organisation, incivility from inside the organisation and witnessing unacceptable behaviour at work.

Both bullying and incivility from outside the organisation (eg by customers, patients or students) and violence from inside and outside the organisation were not strong predictors of any of the measures of health and wellbeing; this may be due to range restriction. Apart from bullying from inside the organisation and witnessing unacceptable behaviour at work, all predictors are restricted in variance (see Section 10.3.1).

7 Results: are 'matched cases' different from 'non-matched cases'?

7.1 Background

Before conducting the attrition analysis, both the unmatched data set from T1 and the matched data set were checked for outliers; extreme outlier scores more than three standard deviations from the mean were removed from any further analysis. Preliminary checks also revealed that the key independent variables (ie the unacceptable behaviour measures) were skewed. Therefore all of the key independent variables were recoded to create dichotomous variables, representing infrequent (0) versus frequent (1) exposure to unacceptable behaviour. The criteria for recoding are discussed in Section 4.1.

7.2 Attrition analysis

An attrition analysis was conducted, using multivariate ANOVA, of key study variables to examine whether there were any key differences between those employees who had filled in questionnaires at both time points ('matched cases'), and those that had completed it only at T1 ('non-matched cases').

The scales and items examined in this way were:

- bullying (from inside, infrequent/frequent)
- bullying (from outside, infrequent/frequent)
- violence (from inside, infrequent/frequent)
- violence (from outside, infrequent/frequent)
- incivility (from inside, infrequent/frequent)
- incivility (from outside, infrequent/frequent)
- witnessing unacceptable behaviour (infrequent/frequent)
- work-related anxiety
- work-related depression
- emotional exhaustion
- post-traumatic stress
- Physical Health Questionnaire (PHQ)
- general mental strain (GHQ12)
- workload demands
- job autonomy
- organisational commitment
- resilience
- optimism
- self-esteem
- negative affectivity
- gender
- age in years
- tenure in years
- organisational sector.

Only those respondents who had fully completed all these scales were included, giving a total number of matched respondents of 98. From these 24 scales and items there were just two variables in which significant differences were found; these are reported in Table 13. In other words, those who remained in the study were very similar to those who dropped out after T1. This degree of similarity offers a good level confidence in the generalisability of any of the longitudinal findings from the matched sample.

Table 13 shows that those with self-reported heavier workload demands have opted to stay in the survey and express their views; they may have a vested interest in reporting their experiences. Those reporting higher self-esteem have also opted to continue with the study.

7.3 Summary of section

There was very little difference between the respondents who remained in the study and those who dropped out after T1. Those with higher workloads and higher self-esteem filled in the questionnaire at both time points.

Scale or item	Non-matched (NM) and matched (M) mean and SD	<i>F</i>	Sig.	Eta
Workload demands (scale)	NM = 2.94 (1.07) M = 3.27 (1.02)	8.34	0.004	0.005
Self-esteem (item)	NM = 3.04 (1.03) M = 3.41 (0.96)	11.93	0.001	0.008

Table 13
Differences between 'non-matched' and 'matched' cases

8 Results: cross-lagged main effects analyses: the relationships between unacceptable behaviour at work and wellbeing of employees

8.1 Background

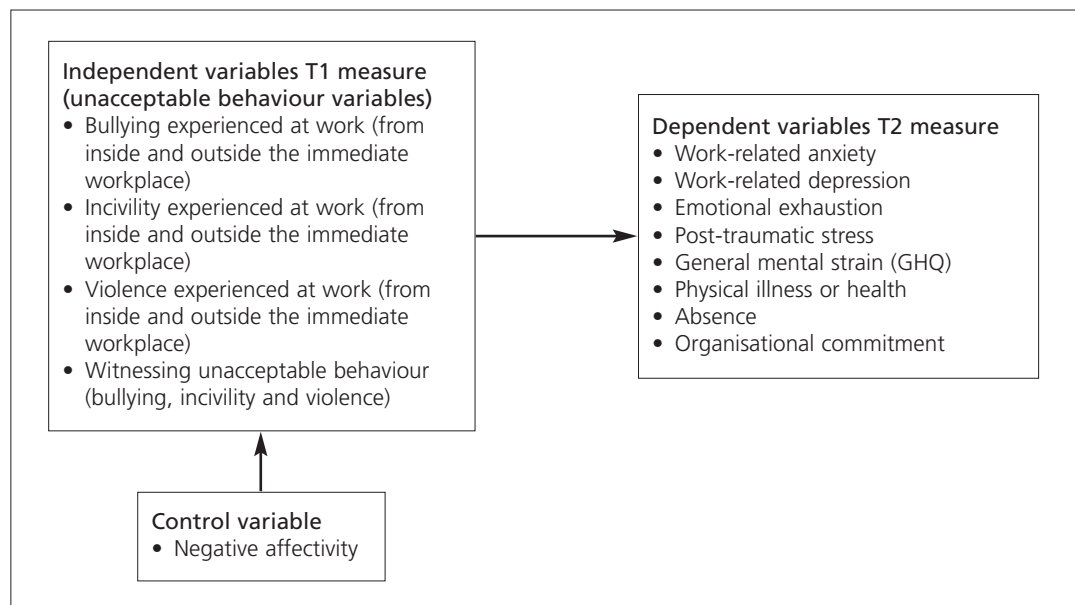
All data were checked for outliers and skews, key variables were dichotomised and extreme outlier scores more than three standard deviations from the mean were removed from any further analysis.

The following analyses were based on an overall sample size of 169 matched cases. However, not all of these participants fully completed every item on both questionnaires. Each analysis is therefore based on a slightly different number of participants.

8.2 Rationale for cross-lagged analysis

This section examines the cross-lagged effects of the independent variables (bullying, violence, incivility and witnessing these negative acts) measured at T1 on the dependent variables (work-related anxiety, work-related depression, emotional exhaustion, post-traumatic stress symptoms, general mental strain (GHQ-12), physical ill health, absence and organisational commitment) measured at T2 (see Figure 3).

Figure 3
Cross-lagged main effects model



8.3 Preliminary analysis

Correlations between the key independent variables were explored. While some of the independent variables significantly correlated with each other (as expected with similar constructs), none of them correlated above a level of 0.66. As a general rule, 0.70 is the level at which multi-collinearity is evident, so caution was exercised in proceeding with the 0.66 correlations.

To reiterate, the key independent variables were:

- bullying (from insiders and outsiders)
- incivility (from insiders and outsiders)
- violence (from insiders and outsiders)
- witnessing unacceptable behaviour (note that this was a short composite scale including elements of bullying, violence and incivility).

Analyses were then performed to check whether any of the background variables needed to be controlled for in the main analysis. A series of ANOVAs were performed with the categorical background variables (union, level of education, organisation, job level within organisation, work pattern and ethnicity) to see whether any of them consistently and significantly related to the outcome variables of interest. The continuous and dichotomous background variables (age, gender, hours worked and tenure) were then explored with a correlation analysis (see Appendix 1). The analyses

showed none of the background variables to consistently and significantly relate to the health and wellbeing outcome variables.

Negative affectivity (NA) was controlled for in all subsequent analyses (as recommended by Judge *et al.*⁵⁷). NA can artificially inflate correlations between variables since it can be indicative of a 'pessimistic' outlook and therefore a 'negative' style of responding to all survey items. Although there is some debate about controlling for NA (see, for example, Spector *et al.*⁵⁸), we found that NA at T1 consistently and significantly related to dependent variables of interest (see Appendix 1), which suggested that NA should indeed be controlled for.

Before the main analyses, correlations were calculated between all seven key independent variables and all the outcome variables. This was to identify those independent variables (the unacceptable behaviour variables) that significantly correlated with each dependent variable (the health variables). Only the significantly correlated variables were included in the main analyses. This decision was taken in order to increase the power of subsequent analyses. Multiple regression requires a large number of observations; generally it is thought that there should be a minimum of 10 participants per independent variable.

8.4 Analysis procedures

A series of cross-lagged hierarchical regression analyses was performed with each dependent variable in turn. For each analysis, the same dependent variable at Time One (T1) was entered into the equation at Step 1 (this is to control for the dependent variable at T1, thus providing the cross-lagged element of the analysis). At Step 2 in all of the regression analyses, the control variable for NA at T1 was entered. In Step 3, the unacceptable behaviour variables (only those correlated with each dependent variable) were entered in a block together.

8.5 Does unacceptable behaviour in the workplace 'cause' poorer health and wellbeing?

Seven cross-lagged hierarchical regression analyses were performed. Table 14 summarises each of the analyses conducted. Three significant ($p < 0.05$) causal relationships were found. (Note: One relationship is included where $p = 0.053$ as an illustration of an almost significant relationship.) In the following section the analyses for the three significant regressions are detailed.

Dependent variables	Independent variables
1 T2 Work-related anxiety	Bullying from inside the organisation Incivility from inside the organisation Witnessing unacceptable behaviour at work
2 T2 Work-related depression	Bullying from inside the organisation Incivility from inside the organisation Incivility from outside the organisation Witnessing unacceptable behaviour at work
3 T2 Emotional exhaustion	Bullying from inside the organisation Incivility from outside the organisation Witnessing unacceptable behaviour at work
4 T2 Post-traumatic stress	Bullying from inside the organisation Incivility from outside the organisation Witnessing unacceptable behaviour at work
5 T2 General mental strain (GHQ)	Bullying from inside the organisation
6 T2 Physical illness or health	Bullying from inside the organisation Incivility from inside the organisation Incivility from outside the organisation Witnessing unacceptable behaviour at work
7 T2 Organisational commitment	Bullying from inside the organisation Bullying from outside the organisation Incivility from inside the organisation Witnessing unacceptable behaviour at work

Table 14
Details of the cross-lagged regression analyses conducted

T2 Absence: As none of the predictor variables significantly correlated, none were taken forward to regression analysis.

8.5.1 Unacceptable behaviour at work as a predictor of emotional exhaustion six months later
The results from the regression analysis can be seen in Table 15. T1 emotional exhaustion and T1 negative affectivity were firstly entered into the equation in two separate steps, both acting as control variables. T1 emotional exhaustion is significantly related to T2 emotional exhaustion, accounting for 43.7 per cent of variance ($F(1,81) = 62.92, p < 0.01$). Step 2 showed that T1 negative affectivity did not significantly account for any additional variance in T2 emotional exhaustion.

Table 15
Cross-lagged
regression:
unacceptable
behaviour
predicting
emotional
exhaustion

Variables	Step 1 β	Step 2 β	Step 3 β
T1 Emotional exhaustion	0.661**	0.594**	0.452**
T1 Negative affectivity		0.094	0.123
T1 Bullying from inside the organisation			0.232*
T1 Incivility from outside the organisation			-0.054
T1 Witnessing unacceptable behaviour at work			0.007
R ²	0.437	0.442	0.478
ΔR^2	0.437**	0.004	0.037

* $p < 0.05$; ** $p < 0.01$

To evaluate the main effects hypothesis, bullying from inside the organisation, incivility from outside the organisation and witnessing unacceptable behaviour were entered into the Step 3 of the equation. When all the unacceptable behaviour predictors are added into the equation, the amount of variability in T2 emotional exhaustion does not significantly increase: $\Delta R^2 = 0.037$, F-change (3,77) = 0.1795, $p > 0.05$. However, the model as a whole does significantly account for 47.8 per cent of variance in T2 emotional exhaustion ($R^2 = 0.478$), $F(5,77) = 14.103, p < 0.01$).

Examination of Step 3 shows that T1 bullying from inside the organisation does significantly predict the control variables in the equation: $t = 932, p = 0.053$. Neither incivility from outside the organisation nor witnessing unacceptable behaviour significantly accounted for any variance in T2 emotional exhaustion.

An examination of the standardised significant beta weights indicates that participants who frequently experience bullying from inside their organisation are more likely to report higher levels of emotional exhaustion; these variables share a cause-effect relationship ($\beta = 0.232, p = 0.053$).

8.5.2 Unacceptable behaviour at work predicting general mental strain (GHQ-12) six months later

Acting as control variables, general mental health (as measured by the GHQ) at T1 and negative affectivity (NA) were entered into the equation in Steps 1 and 2. Step 1 indicates that T1 GHQ is significantly related to T2 GHQ, accounting for 26.1 per cent of variance ($F(1,82) = 28.95, p < 0.01$). At Step 2, T1 NA did not significantly account for any additional variance in T2 general mental strain.

T1 bullying from inside the organisation was the only unacceptable behaviour predictor variable to be included in the equation, entered in Step 3. The addition of this variable at Step 3 explained an additional 3.8 per cent of the variance in T2 GHQ ($\Delta R^2 = 0.038$, F-change (1, 80) = 4.399, $p < 0.05$). Further examination of the individual predictor variables in Step 3 shows that T1 bullying from inside the organisation does significantly predict the control variables in the equation ($t = 2.097, p < 0.05$).

The standardised significant beta weights in Step 3 indicate that participants who frequently experience bullying from inside their organisation are more likely to report higher levels of subsequent general mental strain ($\beta = 0.223, p < 0.05$).

The model as a whole significantly accounts for 30.4 per cent of variance in T2 general mental strain ($R^2 = 0.304$), $F(3,80) = 11.621, p < 0.01$). Results for the regression analysis can be seen in Table 16.

Variables	Step 1 β	Step 2 β	Step 3 β
T1 General mental strain	0.511**	0.444**	0.343*
T1 Negative affectivity		0.094	0.086
T1 Bullying from inside the organisation			0.223*
R ²	0.261	0.265	0.304
ΔR^2	0.261**	0.004	0.038

Table 16
Cross-lagged regression:
unacceptable behaviour predicting general mental strain

* $p < 0.05$; ** $p < 0.01$

8.5.3 Unacceptable behaviour at work predicting physical illness six months later

Table 17 shows the results from the cross-lagged hierarchical regression analysis used to examine factors predicting physical illness at T2. In Step 1 physical illness at T1 was entered as a control variable and significantly accounted for 48 per cent of the variance in T2 physical illness ($R^2 = 0.48$, $F(1,82) = 75.77$, $p < 0.01$). The control variable of T1 negative affectivity, entered in Step 2 of the equation, did not significantly account for any additional variance in T2 physical illness.

Variables	Step 1 β	Step 2 β	Step 3 β
T1 Physical illness	0.693**	0.722**	0.682**
T1 Negative affectivity		-0.048	-0.053
T1 Bullying from inside the organisation			0.213*
T1 Incivility from inside the organisation			-0.064
T1 Incivility from outside the organisation			-0.079
T1 Witnessing unacceptable behaviour at work			-0.014
R ²	0.480	0.482	0.518
ΔR^2	0.474**	0.469	0.480

Table 17
Cross-lagged regression:
unacceptable behaviour predicting physical illness

* $p < 0.05$; ** $p < 0.01$

Bullying from inside the organisation, incivility from inside the organisation, incivility from outside the organisation and witnessing unacceptable behaviour were entered into Step 3 of the equation. When all the unacceptable behaviour predictors were added into the equation, the amount of variability in T2 physical illness did not significantly increase ($\Delta R^2 = 0.480$, $F\text{-change}(4,77) = 1.451$, $p > 0.05$). However, the model in Step 3 does significantly account for 51.8 per cent of variance in T2 physical illness ($R^2 = 0.518$, $F(6,77) = 13.793$, $p < 0.01$).

T1 bullying from inside the organisation does significantly predict the control variables in the equation ($t = 2.08$, $p < 0.05$). However, none of the other unacceptable behaviour variables entered in Step 3 significantly predicted T2 physical illness.

An examination of the standardised significant beta weights indicates that participants who frequently experience bullying from inside their organisation are more likely to report higher levels of physical illness, illustrating a cause-effect relationship ($\beta = 0.213$, $p < 0.05$).

8.6 Summary of section

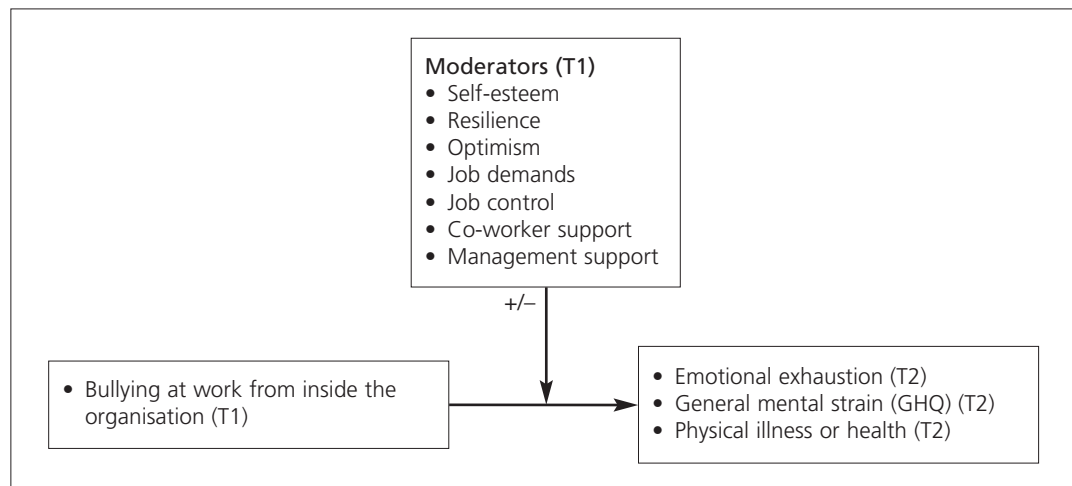
The only unacceptable behaviour variable to emerge as having a significant causal influence on the dependent variables tested was bullying from inside the organisation. Violence, incivility and witnessing unacceptable behaviour might also have revealed significant causal relationships if more matched cases had been available to yield greater statistical power. Bullying from inside the organisation at T1 was found to be a significant causal influence on subsequent levels of emotional exhaustion, general mental strain and physical illness at T2.

9 Results: cross-lagged moderation analyses: the moderators of these causal relationships

9.1 Background

Building on the significant relationships found in regression analyses (that is, the causal relationships between bullying from inside the organisation and employees' subsequent emotional exhaustion, GHQ scores and physical illness), this section reports the results of moderation analyses. More specifically, this is an examination of which factors influence the strength of the relationships previously found in Section 8 (see Figure 4).

Figure 4
Cross-lagged
moderation
paradigm



9.2 Section rationale

The primary aim of this analysis is to identify those factors which may form plausible intervention strategies that are designed to limit the negative mental and physical health outcomes of unacceptable behaviour at work.

9.3 Preliminary analysis

The moderators included in the analysis were selected on the basis of previous research. Before these moderators were tested, all the continuous moderator variables were centred around their respective means. Usually it is also necessary to centre the predictor variable, but in this case the 'bullying from inside' independent variable was already scored in such a way that this was not required (ie 0 or 1). The moderator and independent variables cross-products were then computed.

9.4 Analysis procedures

To examine the third research question – 'What are the moderators of these causal relationships?' – 21 separate moderated regression analyses were calculated, as there were seven potential moderators, each of which could have moderated the possible three cause–effect relationships. Variables were entered into each regression equation in four steps; the control variables were entered individually in Step 1 and Step 2 (dependent variables at T1 and NA at T1 respectively), followed by the independent variable at T1 and the moderator at T1 (Step 3), and finally their respective cross-product (interaction) terms in Step 4.

9.5 Moderated regression analysis

9.5.1 What are the moderators of the relationship between bullying from inside an organisation and emotional exhaustion?

Both T1 optimism and T1 job demands had significant moderating influences on the relationship between bullying and emotional exhaustion. The remaining six variables had non-significant interactions at the $p < 0.05$ level. Only the significant results from the moderation analyses are reported.

Bullying from inside the organisation, optimism and emotional exhaustion

Table 18 shows the results from the moderated regression analysis on the relationship between bullying at T1 and emotional exhaustion at T2. In the first two steps, the control variables – T1

emotional exhaustion and T1 negative affectivity – were entered into the equation in turn. In Step 3, the two main effect variables were entered into the equation, along with the standardised moderator, optimism.

Step 4 shows the results from tests of the interaction. The addition of the product term for the two-way interaction at Step 4 explained an additional 2.7 per cent of the variance in T2 emotional exhaustion, $\Delta R^2 = 0.027$, $F\text{-change}(1,78) = 4.218$, $p < 0.05$.

The overall model presented in Step 4 accounted for 50 per cent of variance in T2 emotional exhaustion, $F(5,78) = 15.627$, $p < 0.01$. In the final model the interaction term was the second strongest predictor of T2 emotional exhaustion, $\beta = -0.254$, $t = -2.054$, $p < 0.05$. The interaction term proved to be a slightly stronger than the main effect of bullying alone, $\beta = -0.225$, $t = -0.247$, $p < 0.05$. The full model is summarised in Table 18, and Figure 5 illustrates this significant moderating relationship.

Variables	Step 1 β	Step 2 β	Step 3 β	Step 4 β
T1 Emotional exhaustion	0.661**	0.595**	0.444**	0.416**
T1 Negative affectivity		0.092	0.097	0.099
T1 Bullying from inside the organisation			0.217*	0.225*
T1 Optimism			-0.047	0.137
T1 Bullying $\times$ optimism				-0.254*
R^2	0.437	0.441	0.473	0.500
ΔR^2	0.437**	0.004	0.033	0.027*

* $p < 0.05$; ** $p < 0.01$

Table 18
Cross-lagged moderation:
bullying from inside
organisations,
optimism and
emotional
exhaustion

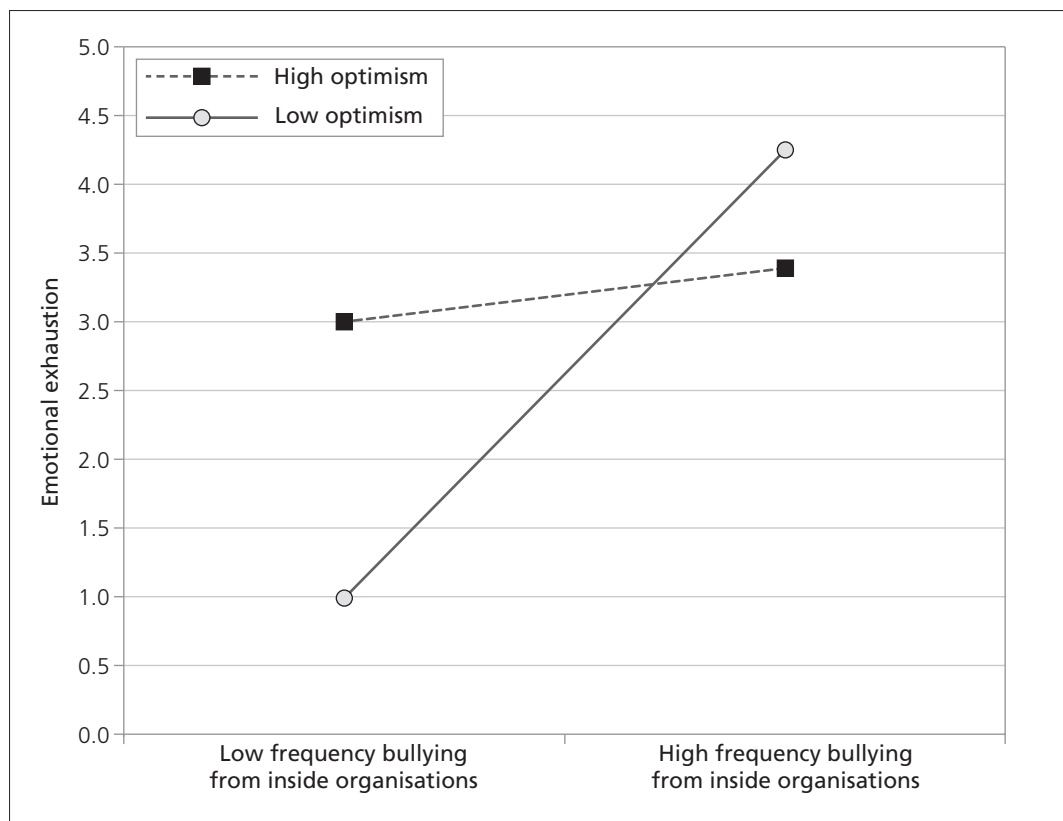


Figure 5
The moderating
effects of optimism
on the relationship
between bullying
from inside
organisations and
emotional
exhaustion

Figure 5 shows that respondents who are high in optimism have reasonably stable levels of emotional exhaustion in times of both low bullying and high bullying. However, those low in optimism have elevated levels of emotional exhaustion in times of greater bullying. The more optimistic employees appear to be somewhat protected against emotional exhaustion when bullying is greater.

Bullying from inside the organisation, job demands and emotional exhaustion

Table 19 shows the results from the moderated regression analysis on the relationship between bullying from inside (T1), job demands (T1) and emotional exhaustion (T2). As before, the control variables – T1 emotional exhaustion and T1 negative affectivity – were entered in Steps 1 and 2. In Step 3 the main effect variable and the moderator job demands were entered. Only T1 bullying was a significant causal predictor of T1 emotional exhaustion, with T1 job demands showing no significant direct causal relationship.

Table 19
Cross-lagged
moderation:
bullying from
inside
organisations, job
demands and
emotional
exhaustion

Variables	Step 1 β	Step 2 β	Step 3 β	Step 4 β
T1 Emotional exhaustion	0.661**	0.595**	0.437**	0.466**
T1 Negative affectivity		0.092	0.090	0.088
T1 Bullying from inside the organisation			0.208*	0.157*
T1 Job demands			-0.075	-0.116
T1 Bullying $\times$ job demands				-0.295*
R ²	0.437	0.441	0.476	0.523
ΔR^2	0.437**	0.004	0.035	0.047**

* $p < 0.05$; ** $p < 0.01$

Step 4 shows the interaction. Step 4 explained an additional 4.7 per cent of the variance in T2 emotional exhaustion: $\Delta R^2 = 0.047$, F-change (1,78) = 7.70, $p < 0.01$.

The overall model presented in Step 4 accounted for 52.3 per cent of variance in T2 emotional exhaustion: $F(5,78) = 17.092$, $p < 0.01$. In the final model, the interaction term was the second strongest predictor of T2 emotional exhaustion: $\beta = -0.295$, $t(78) = 2.775$, $p < 0.05$. The main effect relationship with bullying disappears in the final model, in the presence of the interaction term. Figure 6 further illustrates this significant moderating relationship.

Respondents who experience high job demands also experience elevated emotional exhaustion in times of more frequent bullying. Those experiencing fewer job demands remain more stable in terms of emotional exhaustion levels, in times of either infrequent or frequent bullying (denoted by the shallower angle of the slope). This suggests that high job (workload) demands serve to exacerbate the exhausting emotional impact of more frequently experienced bullying.

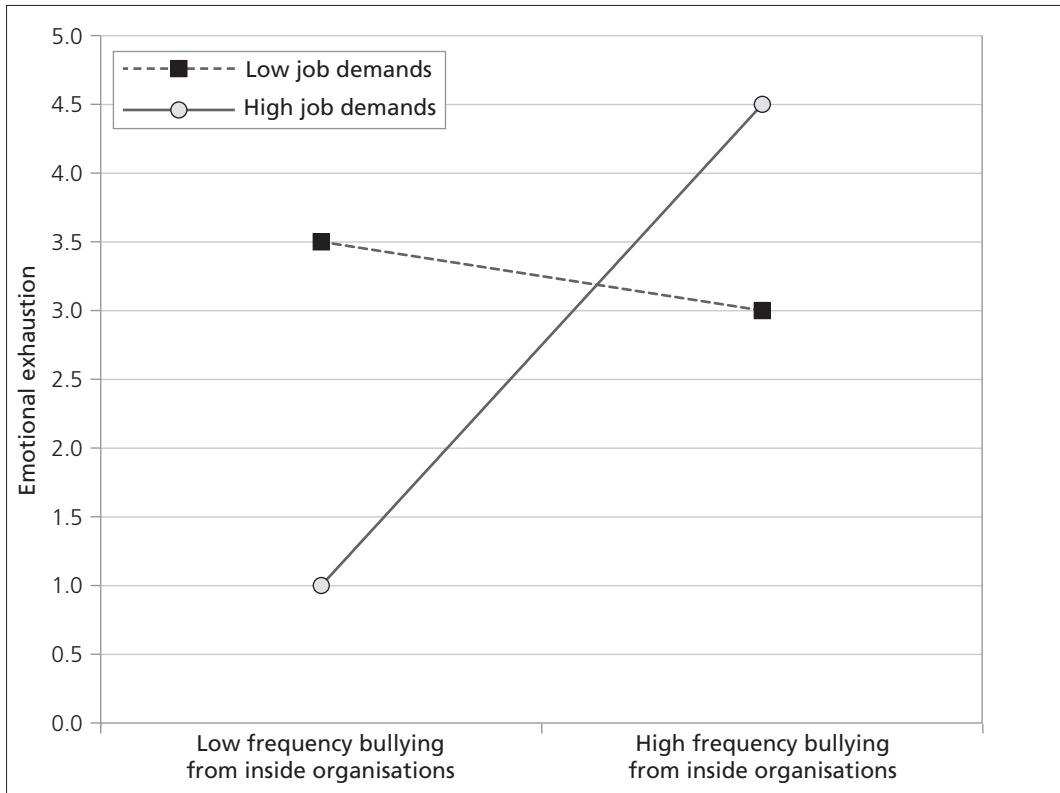
9.5.2 What moderates the relationship between bullying from inside an organisation and general mental strain?

Self-esteem (T1) was the only significant moderator of the relationship between bullying and health effects illustrated by the GHQ. This section provides more details on these findings.

Bullying from inside an organisation, self-esteem and general mental strain

Table 20 shows the results from the moderated regression on the relationship between bullying and GHQ. Again, the control variables – general mental strain (GHQ-12) at T1 and negative affectivity at T1 – were entered in Steps 1 and 2. In Step 3 the independent variable (bullying) and the moderator variable (self-esteem) were entered into the equation. Only bullying from inside showed as a significant causal predictor of T1 emotional exhaustion, with T1 self-esteem showing no significant direct causal relationship. Step 4 presents the results from tests of the interaction hypothesis. Step 4 explained an additional 3.3 per cent of the variance in T2 GHQ: $\Delta R^2 = 0.033$, F-change (1,78) = 4.121, $p < 0.05$.

The overall model presented in Step 4 accounted for 36.8 per cent of variance in general mental strain at T2 GHQ: $F(5,78) = 9.096$, $p < 0.01$. In the final model the interaction term was the third strongest

**Figure 6**

The moderating effects of job demands on the relationship between bullying from inside organisations and emotional exhaustion

Variables	Step 1 β	Step 2 β	Step 3 β	Step 4 β
T1 General mental strain (GHQ)	0.511**	0.444**	0.288*	0.296*
T1 Negative affectivity		0.094	0.036	0.042
T1 Bullying from inside the organisation			0.272*	0.276*
T1 Self-esteem			-0.197	-0.024
T1 Bullying $\times$ self-esteem				-0.249*
R ²	0.261	0.265	0.335	0.368
ΔR^2	0.261**	0.004	0.070*	0.033*

* $p < 0.05$; ** $p < 0.01$

Table 20

Cross-lagged moderation: bullying from inside organisations, self-esteem and general mental strain (GHQ)

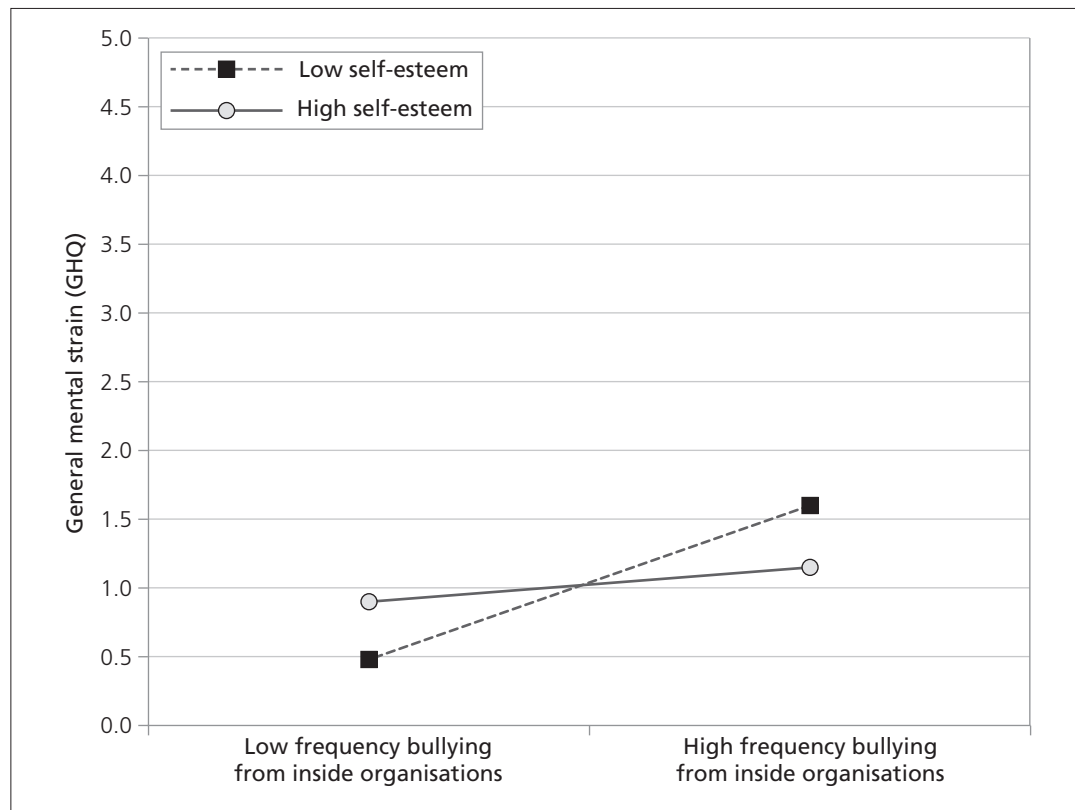
predictor of T2 GHQ, $\beta = -0.249$, $t(78) = -2.030$, $p < 0.05$. The main effect relationship between bullying and general mental strain (T2) remains a stronger predictor than the interaction term in the final model (second to the control variable T1 GHQ, $\beta = 0.276$, $p < 0.05$). Figure 7 shows a plot of these relationships.

Perhaps unsurprisingly, self-esteem acts as a buffer in times of more frequent bullying at work. Those with high self-esteem show relatively stable levels of general mental strain in times of either infrequent or frequent bullying. Those with low self-esteem experience elevated general mental strain when bullying is more frequent; low self-esteem is positively related to both frequency of bullying and general mental strain.

9.5.3 What moderates the relationship between bullying from inside an organisation and physical illness?

None of the variables tested significantly moderated the relationship between T1 bullying and T2 physical health at the $p < 0.05$ level. However, the interaction term of 'self esteem T1' almost met the significance level: F-change (1,79) = 3.679, $p = 0.059$.

Figure 7
The moderating effects of self-esteem on the relationship between bullying from inside organisations and general mental strain



9.6 Summary of section

Both optimism and job (workload) demands are moderators of the causal relationship between bullying from inside and emotional exhaustion. More specifically, those employees low in optimism have elevated levels of emotional exhaustion when bullying is more frequent. More optimistic employees appear to be somewhat protected against emotional exhaustion when bullying is more frequent. Employees experiencing high job demands also experience elevated emotional exhaustion if exposed to more frequent bullying, which suggests that high workload demands exacerbate the exhausting emotional impact of frequently experienced bullying.

The only significant moderator of the relationship between bullying and general mental strain was self-esteem; those with low self-esteem experience elevated general mental strain when bullying is more frequent. Self-esteem had an almost significant moderating effect on the relationship between bullying and physical illness.

10 Discussion and recommendations

10.1 Summary of key findings

10.1.1 Question 1: What is the prevalence of violence, bullying and incivility – originating from both inside and outside organisations – in a large, diverse sample of UK employees?
The most frequently reported unacceptable behaviour from the six examined is bullying from inside organisations. Thirty-nine per cent of respondents had experienced at least one negative act either weekly or daily over the previous six months. (Recent classification work by Notelaers⁸⁹ suggests that this can be considered a conservative estimate of prevalence.)

Seventeen per cent of respondents reported frequent bullying from outside their organisation.

The frequency of bullying was examined by using a measure which includes 22 negative acts; these acts vary in intensity from 'being exposed to an unmanageable workload' and 'having your opinions and views ignored' to 'threats of violence or physical abuse or actual abuse'. From an internal source, the most frequently reported negative act was 'being exposed to an unmanageable workload', whereas from an external source the most frequently reported negative act was 'being shouted at or being the target of spontaneous anger or rage'.

Other headline figures from the study were:

- 17 per cent of respondents reported frequent incivility from inside their organisation
- 10 per cent reported frequent violence from outside
- 7 per cent reported incivility from outside
- 4 per cent reported violence from inside.

Sector

There are some sector differences. However, caution is urged in interpreting these results as in most cases 'sectors' are represented by single organisations (or by departments within larger organisations).

Gender

For both men and women by far the most frequently reported unacceptable behaviour was negative acts originating from inside organisations. There were some significant differences between males and females with respect to experiencing unacceptable behaviour that originated from outside the organisation. Men reported more bullying, violence and incivility from outside and inside than women.

Job level

Employee-level participants reported significantly more violence, bullying and incivility than middle and senior management. The differences concerning unacceptable behaviour from outside the respondent's organisation probably strongly reflect that their roles often have customer/client-facing aspects.

Educational level

Four out of six of the highest reported frequencies of unacceptable behaviour events are reported by those with no educational qualifications. Three of the four most frequently reported unacceptable behaviours by those with no qualifications originate from organisational outsiders.

10.1.2 Question 2: What are the relationships between work-related unacceptable behaviour and wellbeing outcomes for employees?

Key finding from the T1 cross-sectional analyses

- Bullying from inside the organisation, incivility from inside the organisation and witnessing unacceptable behaviour at work are all consistently and negatively associated with employee health and wellbeing outcomes.

Key findings from the cross-lagged longitudinal analysis

- Employees who reported that they frequently experienced bullying from inside their organisation are more likely to report higher levels of emotional exhaustion six months later.
- Employees who frequently experience bullying from inside their organisation are more likely to report higher levels of subsequent general mental strain (as measured by the GHQ-12) six months later.

- Employees who frequently experience bullying from inside their organisation are more likely to report more physical illness symptoms six months later.

The present study is one of very few conducted in the UK that have collected longitudinal data on a comprehensive range of measures of both unacceptable behaviour and health outcomes.

10.1.3 Question 3: What are the most important moderators of these causal relationships?

- Employees who are low in optimism have elevated levels of emotional exhaustion in times of more frequent bullying
- Employees experiencing high job demands experience elevated emotional exhaustion in times of more frequent bullying
- Employees with low self-esteem experience elevated general mental strain when bullying is more frequent.

10.1.4 Question 4: What are the most promising candidates for the development of successful interventions to limit the risks to employee health from unacceptable behaviour at work?

This research provides evidence from a large sample of UK employees (mostly public sector, yet from diverse organisations) for the relatively high prevalence – and the negative health implications – of unacceptable behaviour within workplaces. A major strength of the research is the longitudinal data on participants from more than one organisation in the UK. Although the number of ‘matched’ data was disappointing, there were enough to conduct various statistical tests that can suggest which novel interventions are worth investigating further. This discussion section is supported by qualitative data in the form of written comments from respondents collected during the research.

Bullying and work demands

One respondent commented:

I believe downsizing, increasing work overload and the associated stress account for much of the unacceptable behaviour in the organisation

Employees in the present study experienced a greater degree of emotional exhaustion when both job demands and bullying were high for them. Thus, high job demands (workload) make it harder for employees to cope with more frequent unacceptable behaviour in the workplace. This fits with Hobfoll’s conservation of resources theory (COR) of stress,⁹⁰ as experiencing both high job demands and bullying appears especially depleting for an individual’s personal resources. Interventions designed to enhance self-esteem and optimism can be used to offset such resource losses.

People considering the prevalence of bullying in their own organisations are advised to examine workload demands simultaneously. By doing this, they can limit the additional emotional impact that high workload can have on employees who are also experiencing frequent negative acts. Thus, one potentially successful intervention in any workplace is to monitor levels of work demand for all employees and take the necessary steps to reduce this workload. Practically, the advice provided by the Health and Safety Executive (HSE) in its Management Standards for work-related stress⁹¹ are a good place for managers to start working on this.

In terms of advancing theoretical models, this suggests that an expanded job design model (see Parker & Wall⁹²) could usefully include unacceptable behaviour as another facet, thus improving predictive power.

Bullying and self-esteem

Employees in our study experienced a greater degree of general mental strain when they reported lower self-esteem and a higher frequency of bullying. Matthiesen & Einarsen⁹³ have already shown that targets of bullying report lower levels of self-esteem. On the other hand high self-esteem is related to aggressive behaviour.⁹⁴

A commonly held view is that some people are more vulnerable than others – because they are not assertive, they do not defend themselves and do not manage conflicts constructively.⁹⁵ These people are seen as the natural victims of bullying. Others have also asserted that certain employees are more vulnerable to bullying tactics.³⁷

The present study provides support for the buffering hypothesis for self-esteem, as those with high self-esteem show relatively stable levels of general mental strain in times of either infrequent or frequent bullying.

All organisations must have a zero tolerance for bullying and, as such, deal with those that bully others by using their institutional policies. Yet, our findings in relation to self-esteem appear to give managers another option in the form of working to boost the self-esteem of some employees. The growing field of positive psychology may provide the backdrop for developing self-esteem training interventions.

Bullying and optimism

Employees in this study experienced a greater degree of emotional exhaustion when they reported lower optimism and more frequent bullying. Those high in optimism have reasonably stable levels of emotional exhaustion, in times of both low bullying and high bullying. This supports previous research, which has shown that those individuals with high dispositional optimism tend to enjoy greater mental and physical health.⁵⁰ The more optimistic employees are protected against emotional exhaustion when bullying is greater.

Optimism may be one factor which protects against post-traumatic pathology following a violent episode.⁵¹ The present study is valuable because there is little previous research conducted in the UK which has examined optimism in relation to the outcomes of bullying.

The behaviour of workplace bullies must be carefully monitored and tackled according to existing organisational procedures. One plausible way to limit the potential negative impact on health is to consider interventions aimed at raising employee optimism. The research of Martin Seligman on 'learned optimism'⁹⁶ could serve as a useful foundation for designing and building interventions here.

10.2 General discussion

10.2.1 The health implications of witnessing unacceptable behaviour at work

Some respondents noted:

I don't feel bullied very much in the workplace myself but I have seen it with colleagues.

I have witnessed the chief executive shouting when things don't go her way and this encourages less scrupulous managers to believe this is acceptable.

The experience of witnessing bullying and harassment of middle managers by senior managers has an extremely negative and debilitating effect on the whole of the workforce and breeds a culture of fear.

From the cross-sectional data in the present study, witnessing unacceptable behaviour at work emerged as one of the most consistent predictors of employees' health and wellbeing. In a laboratory environment, Porath & Erez⁹⁷ found experimental evidence of employee performance costs associated with 'witnessing' rudeness and incivility in the workplace. This is a strong motivation for organisations to tackle bullying and incivility, as unacceptable behaviour is not only having a negative impact on employee health but also affect employee performance.

Much more needs to be understood about the implications of witnessing unacceptable behaviour, since far more people report witnessing these acts than report experiencing them directly. Further work is needed to ascertain whether the findings of Porath & Erez can be replicated in field studies.

This comment from a respondent is also relevant:

People who witness bullying will not stand up or help the victim because of the same fear of being bullied and victimised.

10.3 Limitations of the study

This was a very ambitious study. The aim was to examine unacceptable behaviour and health in detail at two time points in multiple organisations in a period of just one year. The researchers were pleased with the amount of cross-sectional data they collected at T1 and T2, and greatly appreciate the efforts of all those employees who completed the survey. However, the number of sets of matched data gathered was disappointing. Some of the possible reasons for this are detailed below.

10.3.1 Measurement issues

The negative acts measure (NAQ) was originally developed to measure bullying behaviour taking place within organisations; this could be a reason why external bullying showed a poor variance. The decision to recode variables into 'frequent' and 'infrequent' categories has restricted variance further, but given the skewed nature of the data, this was considered appropriate.

The internal version of the NAQ contained the first unacceptable behaviour questions that participants were asked to answer. These items were filled in more completely and comprehensively than other scales in the questionnaire. The short composite scale used for witnessing unacceptable behaviour (bullying, incivility and violence) was filled in more completely. This is probably because it was a relatively short scale.

Concern over questions related to generating the identity numbers

There was widespread concern over the nature of the questions used to get participants to self-generate an identity number that could then be used to match their data. This had a negative impact on the likelihood they would (a) complete the survey at all or (b) complete the survey for a second time. Comments received included:

Nervous as I feel that it may come back to haunt me.

Thinking about how traceable I could be through my answers, which after all build up a pretty good picture of who I am and where I work. I always doubt the confidentiality of these surveys!

Thinking about repercussions. Feeling nervous.

Criticism of the length of questionnaire and the content of it

There was criticism of the length of the questionnaire. It is always difficult to get the balance right between using such opportunities to ask as much as you can about all aspects pertinent to the study and not overburdening participants (and organisations):

It has taken too long to complete and when you see the page full of about 20 questions it puts you off completing it especially as it takes up quite a bit of time.

I think this is a pointless waste of time that no-one will ever listen to or act upon.

10.4 Recommendations

10.4.1 Organisational good practice in relation to unacceptable behaviour at work

Within the organisations that agreed to take part in the study there were encouraging levels of policy and procedure in place to deal with unacceptable behaviour at work. More specifically, from the matched sample, approximately 95 per cent of participants reported that their organisation had a system in place whereby employees could report incidents of unacceptable behaviour. Seventy-four per cent of matched participants said their organisation had 'other policies' relating to unacceptable behaviour and 65 per cent had received training on how to deal with unacceptable behaviour at work. The present authors view such policies, procedures and training as vital in tackling unacceptable workplace behaviour.

In addition, the study strongly suggests that developing training to nurture the self-esteem and optimism of some groups of employees may provide a partial antidote to the negative health effects of bullying. It is recommended that any training be developed after considering the relevant academic literature, especially from the emergent domain of positive psychology – see the work of Frederickson,⁹⁸ Lyubomirsky⁹⁹ and Seligman.⁹⁶ Furthermore, any such training must be evaluated in a rigorous manner.

Incivility in the workplace such as being 'put down or condescended to' may appear trivial to some and it has been suggested that HR departments are not interested in it.¹⁰⁰ However, this low-intensity verbal aggression in organisations must not be just ignored as there is every reason to suspect that this can escalate to more intensive forms of unacceptable behaviour (ie bullying and violence).^{17,101}

10.4.2 Future research

Organisations, academic researchers and practising occupational (health) psychologists must work together firstly to limit the likelihood that unacceptable behaviour occurs and secondly to limit the impact of such behaviour on health.

Future research should evaluate the impact of novel interventions to reduce the negative health implications of unacceptable behaviour at work. For example, do interventions designed to boost employees' optimism and self-esteem have a positive impact on their health and wellbeing, especially on those reporting higher frequencies of bullying?

Such intervention and evaluation is fully justified given both the longitudinal findings from the present study and findings such as those by Brousse *et al.*,³⁷ who state that 'workplace bullying can have severe mental health repercussions, triggering serious and persistent underlying disorders' (p. 122).

Future research with more varied types of organisation (in particular, with more from the private sector) should investigate further the impact of training, policies and procedures. Beech & Leather¹⁰² provide a review of staff violence training models and discuss the need for organisations to adopt staff training based on particular identified needs.

Finally, given the crossover between the psychology and criminology literature on the topic of unacceptable behaviour, it may be useful for future research to examine in more detail relevant information from the criminological scientific literature (eg information on perpetrators). This was suggested by one of the anonymous peer reviewers of this report.

10.5 Conclusions

This study provides sound evidence that bullying from within organisations causes emotional exhaustion, general mental strain and physical health symptoms in employees six months later. The findings are robust, given the sample size, the longitudinal element and the researchers' efforts to gain data from a diverse group of employees. The study contains evidence that both first-hand experiences of bullying and incivility from inside the organisation, and witnessing others being the targets of unacceptable behaviour, affect employee wellbeing.

There is a strong moral imperative to consider the way we act towards others in the workplace, for our own wellbeing and others'. Furthermore, there is evidence that ignoring unacceptable behaviour is not only bad for employee health but could be bad for organisational functioning and performance:⁹⁷

My employer could do so much more to improve its business performance and efficiency by valuing and respecting its people rather than pressuring and micromanaging them into submission.

By suggesting that interventions designed to enhance employee optimism and self-esteem may be a way forward in tackling unacceptable behaviour at work, the present authors are not shifting the emphasis away from tackling bullies. Rather, they are suggesting that such interventions may help to limit the damage that bullies do to others and to promote the efficient functioning of the organisations they work in.

10.6 Postscript: an unintended positive aspect of the survey process

The researchers received many positive comments about taking part in the survey and about the survey instrument itself:

I am really pleased someone has put together this survey & that I have had the opportunity to take part in it. I think the subject is extremely important. I think it is an aspect of work that is being 'turned a blind eye to'.

I feel that a survey like this is long overdue & was wondering what actions will be taken following it.

I was enjoying it, I always find it interesting to find out about my feelings as you don't really often question them or the reasonings behind them. It made me smile or think same old story after nine years! Good survey and enjoyed doing it.

There were many comments suggesting the survey had made participants think about their own behaviour towards others at work:

Thinking more than usual about how I treat others. Thinking that other people probably have a much worse time of it than I do.

The survey drew many comments from people who reflected on how fortunate they were to work where they worked and with the people they worked with:

I have been feeling how lucky I am in my work and colleagues. I have a very good line manager and work in a very friendly office.

How lucky I am to have the job that I have.

10.7 Final words

Data were collected from over 5,000 employees during the course of a year and this generated a large number of data, which have been subjected to the appropriate statistical procedures. However, individual participants expressed some aspects of this research so eloquently that it is appropriate to make these the final words on what the outcomes of this research should be:

I hope this survey leads to better standards of behaviour in the workplace & guidelines on how to treat people, how to speak to people, respect for other people in the workplace and dare I suggest a return to decency & politeness.

I also feel a bit sad that bullying and unacceptable behaviour is happening in the workplace. There just seems to be a lack of respect nowadays. I always quote the old saying 'treat people how you want to be treated yourself'.

Appendix 1: Correlation tables

Table 21
Cross-lagged
correlations
(matched data)
*Continued on next
page*

Variables	Work-related anxiety (T2)	Work-related depression (T2)	Emotional exhaustion (T2)	Post-traumatic stress (T2)
Bullying inside organisation (T1)	0.510**	0.429**	0.534**	0.365**
Bullying outside organisation (T1)	0.121	0.151	0.162	0.135
Violence inside organisation (T1)	0.073	0.107	0.144	-0.042
Violence outside organisation (T1)	0.037	0.124	0.161	0.120
Incivility inside organisation (T1)	0.207*	0.225*	0.182	0.167
Incivility outside organisation (T1)	0.058	0.219*	0.244**	0.245*
Witnessing unacceptable behaviour (T1)	0.402**	0.228*	0.336**	0.303**
Negative affectivity (T1)	0.543**	0.536**	0.516**	0.540**
Work-related anxiety (T1)	0.638**	0.552**	0.559**	0.602**
Work-related depression (T1)	0.532**	0.624**	0.572**	0.537**
Emotional exhaustion (T1)	0.546**	0.574**	0.657**	0.498**
Post-traumatic stress (T1)	0.559**	0.544**	0.485**	0.610**
General mental strain (GHQ) (T1)	0.551**	0.562**	0.483**	0.551**
Physical illness (T1)	0.497**	0.497**	0.601**	0.465**
Absence (T1)	0.302*	0.289*	0.239	0.270
Organisational commitment (T1)	-0.442**	-0.528**	-0.412**	-0.468**
Job demands (T1)	0.380**	0.371**	0.400**	0.383**
Job control (T1)	-0.195	-0.233*	-0.136	-0.182
Co-worker support (T1)	-0.329*	-0.401**	-0.338**	-0.294**
Managerial support (T1)	-0.380**	-0.437**	-0.301**	-0.500**
Optimism (T1)	-0.274**	-0.372**	-0.313**	-0.219*
Resilience (T1)	-0.135	-0.064	-0.059	-0.146
Self-esteem (T1)	-0.159	-0.104	-0.139	-0.242*

* $p < 0.05$; ** $p < 0.01$

N range: 37–106 participants

Table 21
continued

Variables	General mental strain (GHQ) (T2)	Physical illness (T2)	Absence (T2)	Organisational commitment (T2)
Bullying inside organisation (T1)	0.436**	0.491**	0.098	-0.413**
Bullying outside organisation (T1)	0.133	0.196	-0.086	-0.196
Violence inside organisation (T1)	0.051	0.188	0.247	-0.028
Violence outside organisation (T1)	0.084	0.136	-0.088	-0.008
Incivility inside organisation (T1)	0.077	0.206*	0.038	-0.150
Incivility outside organisation (T1)	0.109	0.247*	-0.069	-0.030
Witnessing unacceptable behaviour (T1)	0.174	0.294**	0.179	-0.364**
Negative affectivity (T1)	0.396**	0.373**	0.118	-0.366**
Work-related anxiety (T1)	0.523**	0.333**	0.047	-0.435**
Work-related depression (T1)	0.465**	0.392**	0.108	-0.533**
Emotional exhaustion (T1)	0.454**	0.438**	0.075	-0.441**
Post-traumatic stress (T1)	0.493**	0.331**	-0.001	-0.414**
General mental strain (GHQ) (T1)	0.534**	0.338**	0.139	-0.410**
Physical illness (T1)	0.343**	0.707**	0.177	-0.329**
Absence (T1)	0.091	0.377**	0.503**	-0.091
Organisational commitment (T1)	-0.443**	-0.338**	-0.053	0.809**
Job demands (T1)	0.254*	0.284**	0.004	-0.264*
Job control (T1)	-0.204	-0.217*	-0.304*	0.242*
Co-worker support (T1)	-0.373**	-0.234*	-0.088	0.514**
Managerial support (T1)	-0.338**	-0.179	-0.078	0.377**
Optimism (T1)	-0.281**	-0.196	-0.274*	0.375**
Resilience (T1)	-0.298**	-0.063	0.109	0.311**
Self-esteem (T1)	-0.310**	-0.205*	-0.184	0.171

* $p < 0.05$; ** $p < 0.01$

N range: 37–106 participants

Variables	1	2	3	4	5	6	7
1 Witnessing unacceptable behaviour (T1)	1						
2 Bullying inside organisation (T1)	0.578**	1					
3 Bullying outside organisation (T1)	0.213*	0.261**	1				
4 Violence inside organisation (T1)	0.118	0.198*	0.197*	1			
5 Violence outside organisation (T1)	0.155	0.284**	0.569**	0.316**	1		
6 Incivility inside organisation (T1)	0.359**	0.282**	0.101	0.489**	0.131	1	
7 Incivility outside organisation (T1)	0.188*	0.286**	0.569**	0.349**	0.660**	0.263**	1

* $p < 0.05$; ** $p < 0.01$

Table 22
Correlations on matched data (predictor variables at T1 collinearity analyses)

Variable	1 Age	2 Tenure	3 Gender	4 Hours per week	5 Witnessing unacceptable behaviour	6 Bullying inside organisation	7 Bullying outside organisation	8 Violence inside organisation	9 Violence outside organisation	10 Incivility inside organisation	11 Incivility outside organisation	12 Work-related anxiety	13 Work-related depression
1	1												
2	0.484**	1											
3	0.053**	0.029	1										
4	0.010	-0.012	0.210**	1									
5	-0.056*	-0.002	0.002	0.065**	1								
6	-0.042	0.005	0.001	0.096**	0.505**	1							
7	-0.121**	-0.091**	0.056*	0.066**	0.303**	0.275**	1						
8	-0.040	-0.004	0.025	0.057*	0.155**	0.188**	0.110**	1					
9	-0.074**	-0.031	0.077**	0.072**	0.234	0.164**	0.507**	0.177**	1				
10	0.000	0.021	0.012	0.050*	0.258**	0.463**	0.137**	0.214**	0.097**	1			
11	-0.060**	-0.057*	-0.002	0.036	0.210**	0.192**	0.473**	0.090**	0.412**	0.188**	1		
12	0.018	0.059**	-0.085**	0.066**	0.422**	0.486**	0.163**	0.132**	0.101**	0.442**	0.133**	1	
13	0.011	0.072**	-0.073**	0.019	0.406**	0.514**	0.157**	0.153**	0.100*	0.455**	0.118**	0.834**	1
14	0.011	0.064**	-0.071**	0.088**	0.441**	0.483**	0.191**	0.116**	0.156**	0.402**	0.142**	0.757**	0.758**
15	0.013	0.037	0.058*	0.056*	0.391**	0.478**	0.187**	0.120**	0.105**	0.445**	0.171**	0.701**	0.687**
16	0.025	0.062**	-0.068**	0.039	0.357**	0.464**	0.089**	0.136**	0.056*	0.427**	0.104**	0.785**	0.825**
17	-0.025	0.011	-0.147**	-0.006	0.304**	0.351**	0.169**	0.102**	0.144**	0.315**	0.122**	0.603**	0.620**
18	0.030	0.037	-0.058	-0.012	0.067*	0.093**	0.015	0.055	-0.024	0.169**	-0.028	0.225**	0.268**
19	0.042	-0.045	0.112**	0.059*	-0.165**	-0.212**	-0.029	-0.062**	-0.027	-0.186**	-0.036	-0.389**	-0.407**
20	-0.019	-0.100**	-0.012	0.095**	-0.299**	-0.333**	-0.073**	-0.065**	-0.033	-0.265**	-0.072**	-0.424**	-0.549**
21	0.103**	0.105**	0.003	0.171**	0.310**	0.282**	0.130**	0.078**	0.087**	0.210**	0.084**	0.468**	0.363**
22	0.113**	0.077**	-0.071**	-0.019	-0.200**	-0.212**	-0.197**	-0.087**	-0.183**	-0.097**	-0.174**	-0.189**	-0.204**
23	0.021	0.012	-0.074**	-0.042*	-0.177**	-0.279**	-0.049*	-0.124**	-0.042	-0.276**	-0.071**	-0.353**	-0.370**
24	-0.022	-0.056*	-0.027	-0.073**	-0.306**	-0.391**	-0.090**	-0.110*	-0.049*	-0.327**	-0.070**	-0.472**	-0.504**
25	0.026	-0.040	-0.024	0.020	-0.213**	-0.241**	-0.071**	-0.085*	-0.063*	-0.214**	-0.058*	-0.374**	-0.442**
26	0.001	-0.034	-0.047*	0.054*	-0.108**	-0.107**	-0.034	-0.064**	-0.036	-0.073**	-0.053*	-0.279*	-0.295**
27	0.010	0.045	-0.046	0.018	-0.341**	0.380**	0.113**	0.153**	0.069**	0.374**	0.117**	0.683**	0.684**

Table 23

Cross-sectional correlations T1
(unmatched data only)

Continued opposite

* $p < 0.05$; ** $p < 0.01$
N range: 876–2,654 participants

14 Emotional exhaustion	15 Post-traumatic stress	16 General mental strain (GHQ)	17 Physical health	18 Absence	19 Self-esteem	20 Organisational commitment	21 Job demands	22 Job control	23 Co-worker support	24 Managerial support	25 Optimism	26 Resilience	27 Negative affectivity
1													
0.631**	1												
0.716**	0.692**	1											
0.604**	0.544**	0.650**	1										
0.220**	0.157**	0.291**	0.230**	1									
-0.318**	-0.326**	-0.480**	-0.377**	-0.153**	1								
-0.444**	-0.399**	-0.480**	-0.366**	-0.146**	0.296	1							
0.555**	0.331**	0.381**	0.327**	0.087**	-0.144**	-0.188**	1						
-0.202**	-0.163**	-0.202**	-0.182**	-0.037	0.148**	0.154**	-0.025	1					
-0.290**	-0.361**	-0.382**	-0.256**	-0.150**	0.239**	0.333**	-0.096**	0.154**	1				
-0.408**	-0.438**	-0.487**	-0.352**	-0.163**	0.244*	0.409**	-0.231**	0.229**	0.469**	1			
-0.359**	-0.326**	-0.468**	-0.383**	-0.150**	0.575**	0.387**	-0.147**	0.161**	0.266**	0.286**	1		
-0.252**	-0.210**	-0.647**	-0.279**	-0.086**	0.471**	0.245**	-0.101**	0.164**	0.200**	0.147**	0.419**	1	
0.606**	0.588**	0.715**	0.592**	0.195**	-0.511**	-0.392**	0.335**	-0.172**	-0.327**	-0.399**	-0.493**	-0.383**	1

Appendix 2: Questionnaire measures

Violence was measured using the eight-item Violence at Work Scale.³⁰ Participants were asked to respond on a five-point Likert scale, where 1 = 'never' and 5 = 'daily'. The scale was scored by averaging responses, with a higher score indicating more violent events. Example items are 'having objects thrown at you', 'being sworn at' and 'being spat on or bitten'.

This measure was adapted by examining all eight acts from 'someone outside your organisation' and from 'someone inside your organisation'. As before, respondents were asked to work down each column in turn, thus concentrating on external sources and answering each item, then concentrating on insiders and doing the same. The internal reliability of each of the scales was checked.

The scale examining 'outsiders' against the eight acts was highly reliable, with a Cronbach's alpha of 0.85. (T2 = 0.85). The scale examining 'insiders' was also highly reliable, with a Cronbach's alpha of 0.79. (T2 = 0.52). Given that the scale was originally developed to measure acts from outsiders, it is not surprising to see that the second reliability is lower; nevertheless, it is still highly acceptable. Also, the 'violence from insiders' scale (0.52) was not used in analyses.

Bullying and negative acts were measured using the 22-item version of the Negative Acts Questionnaire.⁹ Respondents were asked to indicate how frequently over the past six months they had experienced each of the 22 negative acts. Examples of negative acts included 'spreading of gossip or rumours about you' or 'being exposed to an unmanageable workload'. The anchors and scoring were as follows: never = 1, now and then = 2, monthly = 3, weekly = 4 and daily = 5.

This measure was adapted by examining all 22 acts from 'someone outside your organisation' and from 'someone inside your organisation'. Respondents were asked to work down each column in turn, thus concentrating on external sources and answering each item, then concentrating on insiders and doing the same. The internal reliability of each of the scales was checked. The scale examining 'outsiders' against the 22 acts was highly reliable, with a Cronbach's alpha of 0.91. (T2 = 0.89). The scale examining 'insiders' was also highly reliable, with a Cronbach's alpha of 0.93 (T2 = 0.93). Given that the scale was originally developed to measure internal bullying, it is perhaps not surprising that the reliability is slightly higher in this case.

Incivility was measured using a seven-item Workplace Incivility Scale.¹⁸ Participants were asked to respond on a five-point Likert scale, where 1 = 'never' and 5 = 'daily'. The scale was scored by averaging responses, with a higher score indicating more incivility had occurred in the previous six months. Example items include 'being ignored or excluded from professional camaraderie' and 'being put down or condescended to'. Again, this measure was adapted by examining all seven acts from 'someone outside your organisation' and from 'someone inside your organisation'. As before, respondents were asked to work down each column in turn, thus concentrating on external sources and answering each item, then concentrating on insiders and doing the same. The internal reliability of each of the scales was checked. The scale examining 'outsiders' against the seven acts was highly reliable, with a Cronbach's alpha of 0.89. (T2 = 0.85). The scale examining 'insiders' was also highly reliable, with a Cronbach's alpha of 0.90. (T2 = 0.92).

Witnessing unacceptable behaviour was measured by adapting items from the NAQ, the Violence at Work Scale and the Incivility Scale. Participants were asked to respond on a five-point Likert scale, where 1 = 'never' and 5 = 'daily'. In essence, the items were not changed; rather, the stem of the question to participants was. Thus, they were asked: 'Please indicate how often you have witnessed others at work being subjected to these acts over the last six months'. Six items from the NAQ were used, three from the Violence at Work Scale and three from the Incivility Scale. The resulting 12-item scale is robust, with a Cronbach's alpha of 0.90 (T2 = 0.90).

Health and wellbeing measures

Work-related mental health was measured using a six-item scale developed by Warr.⁶⁵ The question asks: 'Over the last six months, how much of the time has your job made you feel: tense, miserable, depressed, worried, uneasy, gloomy?'. Three items measure work-related anxiety (tense, worried, uneasy) and three measure depression (miserable, depressed, gloomy). Participants were asked to respond on a five-point Likert scale which ranged from 1 = 'never' to 5 = 'all of the time'. The six items taken together have a Cronbach's alpha of 0.95. The separate anxiety element has an alpha of 0.91 (T2 = 0.90) and the depression element 0.94 (T2 = 0.93).

Emotional exhaustion was measured using three items from the Maslach Burnout Inventory.⁶⁶ The respondents were asked: 'How often have you experienced the following over the past six months?' An example item is: 'I feel used up at the end of the workday'. Participants were asked to respond on a seven-point Likert scale, ranging from 1 = 'never' to 7 = 'daily'. The three-item scale showed an acceptable Cronbach's alpha of 0.94 ($T2 = 0.95$).

Post-traumatic stress symptoms were measured using four items from the Impact of Events Scale.⁶⁷ The participants were asked: 'Over the past six months, how much have you experienced the following about a negative experience (or experiences) with someone inside or outside your organisation, that occurred while you were at work?' An example item is 'I had waves of strong feelings about it'. Participants were asked to respond on a five-point Likert scale ranging from 1 = 'not at all' to 5 = 'a great deal'. The Cronbach's alpha was 0.89 ($T2 = 0.85$).

General mental strain used the 12-item version of the General Health Questionnaire (GHQ-12) developed by Goldberg.⁶⁸ The GHQ is a screening test for detecting minor psychiatric disorders in the general population. The test has been used many times in occupational research to assess 'strain' (for example, see Mullarkey *et al.*¹⁰³). Participants were asked to respond on a four-point Likert scale with values ranging from 0 = 'not at all' to 3 = 'much more than usual'. An example item is 'Lost much sleep over worry?' The Cronbach's alpha was 0.95 ($T2 = 0.95$).

Physical health was measured using an eight-item measure called the Physical Health Questionnaire,⁶⁹ which is a modified version of the Spence *et al.* measure.¹⁰⁴ Participants were asked again to reflect on the past six months and indicate the degree to which they had experienced eight different symptoms. The Likert response scale ranged from 1 = 'not at all' to 7 = 'all of the time'. Example items were: 'How often have you woken up during the night?', 'How often have you suffered from an upset stomach (indigestion)?' The Cronbach's alpha was 0.78 ($T2 = 0.83$).

Organisational outcome measures

Self-reported absenteeism was measured with a single item that asked: 'During the past six months, how many days have you been off work ill?' Respondents were asked to indicate how many days.

Organisational commitment was measured using a five-item scale developed by Cook & Wall.¹⁰⁵ Respondents were asked to indicate the extent to which they agreed or disagreed with five statements. The scale ranged from 1 = 'strongly disagree' to 5 = 'strongly agree'. Example statements were: 'I am proud to be able to tell people who it is I work for' and 'I feel myself to be part of this organisation'. The Cronbach's alpha was 0.78 ($T2 = 0.85$).

Moderator measures

Job demands (workload) was measured with a three-item measure based on Caplan *et al.*⁷⁰ Respondents were asked to indicate how often these aspects of workload happened to them, from 1 = 'not at all' to 5 = 'a great deal'. An example item was: 'Is your work mentally demanding?' The Cronbach's alpha was 0.82 ($T2 = 0.78$).

Work autonomy was measured using another three-item measure. This scale was based on that developed by Jackson *et al.*⁷¹ and Wall *et al.*⁷² Respondents were asked to indicate the extent of autonomy by using a scale that ranged from 1 = 'not at all' to 5 = 'a great deal'. An example item was: 'Do you set your own pace of working?' The Cronbach's alpha was 0.89 ($T2 = 0.89$).

Social support from colleagues was measured with a three-item measure based on O'Hara,⁷³ which was based on Caplan *et al.*⁷⁰ The response scale ranged from 1 = 'strongly disagree' to 5 = 'strongly agree'. An example item was: 'I feel I can talk to my colleagues about personal problems'. The Cronbach's alpha was 0.85. ($T2 = 0.87$).

Management style was measured with a three-item item measure based on O'Hara,⁷³ which was based on Caplan *et al.*⁷⁰ The response scale ranged from 1 = 'strongly disagree' to 5 = 'strongly agree'. An example item was: 'I feel safe to voice my opinions to my manager'. The Cronbach's alpha was 0.93. ($T2 = 0.93$).

Optimism was measured using a three-item measure from the Life Orientation Test (LOT)⁷⁴ used as an optimism subscale of the PsyCap questionnaire (PCQ).⁷⁵ The response scale ranged from 1 = 'strongly disagree' to 5 = 'strongly agree'. An example item was: 'I'm always optimistic about my future'. The Cronbach's alpha was 0.79. ($T2 = 0.80$).

Resilience was measured using a three-item scale developed by Wagnild & Young,⁷⁶ used as a resilience subscale of the PsyCap questionnaire (PCQ).⁷⁵ The response scale ranged from 1 = 'strongly disagree' to 5 = 'strongly agree'. An example item was: 'I usually manage difficulties one way or another'. The Cronbach's alpha was 0.72. (T2 = 0.63).

Self-esteem was measured using Robins, Hendin & Trzesniewski's single-item self-esteem scale⁷⁷ with the statement 'I have high self-esteem' measured on a five-point scale from 1 = 'not very true of me' to 5 = 'very true of me'. The authors of the scale report four studies, which together demonstrated test-retest reliability over four years. It also has superior construct validity when compared to Rosenberg's¹⁰⁶ standard measure and predictive validity with respect to psychological and physical wellbeing.

Control measure

Negative affectivity was measured using the Negative Affectivity Scale.⁷⁸ An example item was: 'In general, how much of the time do you feel upset?' The response scale was from 1 = 'very slightly' to 5 = 'very much'. The Cronbach's alpha was 0.82. (T2 = 0.72).

Note: Reliabilities at T2 are for matched datasets only.

Appendix 3: Descriptive statistics on unacceptable behaviour measures

The following means and standard deviations are based on the analysis of T1 data only ($n = c.2,000$). The full scales are available from the respective authors.

Negative Acts Questionnaire (NAQ)⁹

Scale: 1 = 'never'; 2 = 'now and then'; 3 = 'monthly'; 4 = 'weekly'; 5 = 'daily'

The majority of negative acts are experienced either 'never' or 'now and then'. The pattern and magnitude of acts that originate from inside the organisation is somewhat different. The most likely to occur are, in ascending order:

- 'being ordered to do work below your level of competence' (1.90; sd = 1.16)
- 'being given tasks with unreasonable or impossible targets or deadlines' (1.97; sd = 1.15)
- 'having your opinions and views ignored' (1.97; sd = 1.06)
- 'being exposed to an unmanageable workload' (2.07; sd = 1.23).

The most likely event that originates from somebody outside the organisation is 'being shouted at or being the target of spontaneous anger or rage' (1.72; sd = 0.97).

Violence at Work Scale³⁰

Scale: 1 = 'never'; 2 = 'now and then'; 3 = 'monthly'; 4 = 'weekly'; 5 = 'daily'

Most respondents reported that they experienced this behaviour from those outside and inside the organisation fairly infrequently. The behaviour reported the most was 'being sworn at' by outsiders (1.73; sd = 1.06) and insiders (1.28; sd = 0.69); but again this can be interpreted as less than 'now and then'. Employees are less likely to be sworn at by a colleague than by a customer and are more likely to be threatened with physical violence by a customer or client (1.32; sd = 0.67), than by a colleague (1.05; sd = 0.30).

Workplace Incivility Scale¹⁸

Scale: 1 = 'never'; 2 = 'now and then'; 3 = 'monthly'; 4 = 'weekly'; 5 = 'daily'

Incivility more commonly originates from inside an organisation. Participants reported that 'having little interest paid to your statement or little interest shown in your opinion' (1.87; sd = 1.02) and 'having your judgment doubted on a matter over which you have responsibility' (1.72; sd = 0.93) were the most frequent behaviours exhibited by colleagues. Again, these scores fall between 'never' and 'now and then'.

Witnessing unacceptable behaviour: items adapted from the NAQ, Violence and Incivility measures by Sprigg *et al.*

Scale: 1 = 'never'; 2 = 'now and then'; 3 = 'monthly'; 4 = 'weekly'; 5 = 'daily'

For a detailed analysis of the means and standard deviations for this measure, see Table 24.

Participants reported witnessing unacceptable behaviour more frequently than being a direct victim of it; half of the mean scores lie between the 'now and then' and 'monthly' response categories. It can be seen that 'being exposed to unmanageable workloads' is the most common type of unacceptable behaviour witnessed (2.58), closely followed by witnessing 'people's opinions and views being ignored' (2.34).

Table 24
Analysis of
respondents
witnessing
unacceptable
behaviour towards
others

Unacceptable behaviour	Witnessed others being subjected to this behaviour	
	mean	sd
1 Information being withheld that affects people's performance	1.83	0.95
2 Insulting or offensive remarks being made about people (ie habits and background), their attitudes or their private lives	2.08	1.16
3 Intimidating behaviour such as finger-pointing, invasion of personal space, shoving, blocking/barring the way	1.53	0.90
4 Opinions and views being ignored	2.34	1.18
5 Being exposed to an unmanageable workload	2.58	1.39
6 Being shouted at or being the target of spontaneous anger or rage	1.77	1.04
7 Objects being thrown at someone	1.18	0.54
8 Being hit, kicked, grabbed, shoved or pushed	1.15	0.52
9 Being threatened with physical violence	1.31	0.73
10 Being put down or condescended to	2.03	1.14
11 Little interest being paid to their statement or little interest being shown in their opinion	2.23	1.18
12 Demeaning or derogatory remarks being made	2.04	1.17

References

- 1 Barling J, Dupré K E and Kelloway E K. Predicting workplace aggression and violence. *The Annual Review of Psychology* 2009; 60: 671–692.
- 2 Beswick J, Gore J and Palferman D. *Bullying at work: a review of the literature* (WPS/06/04). Buxton: Health and Safety Laboratory, 2006.
- 3 Hoel H and Giga S I. *Destructive interpersonal conflict in the workplace: the effectiveness of management interventions*. London: British Occupational Health Research Foundation, 2006.
- 4 Schat A and Kelloway E K. Workplace violence. In: Barling J, Kelloway E K and Frone M R (eds). *Handbook of workplace stress* (pp. 189–218). Thousand Oaks, California: Sage Publications, 2005.
- 5 Schat A C H, Frone M R and Kelloway E K. Prevalence of workplace aggression in the US workforce: findings from a national study. In: Kelloway E K, Barling J and Hurrell J J (eds). *Handbook of workplace violence* (pp. 47–89). Thousand Oaks, California: Sage Publications, 2006.
- 6 Einarsen S, Hoel H, Zapf D and Cooper C L. The concept of bullying at work: the European tradition. In: Einarsen S, Hoel H, Zapf D and Cooper C L (eds). *Bullying and emotional abuse in the workplace: international perspectives in research and practice* (pp. 3–30). London: Taylor and Francis, 2003.
- 7 Rayner C and Cooper C L. Workplace bullying. In: Kelloway E K, Barling J and Hurrell J J (eds). *Handbook of workplace violence* (pp. 121–146). Thousand Oaks, California: Sage Publications, 2006.
- 8 Björkqvist K, Osterman K and Hjelt-Back M. Aggression among university employees. *Aggressive Behaviour* 1994; 20: 173–184.
- 9 Einarsen S and Raknes B I. Harassment in the workplace and the victimisation of men. *Violence and Victims* 1997; 12 (3): 247–263.
- 10 Einarsen S and Skogstad A. Bullying at work: epidemiological findings in public and private organisations. *European Journal of Work and Organisational Psychology* 1996; 5: 185–201.
- 11 Vartia M. Psychological harassment (bullying, mobbing) at work. In: Kauppinen-Toropainen K (ed.). *OECD panel group on women, work and health* (pp. 149–152). Helsinki: Ministry of Social Affairs and Health, 1993.
- 12 Zapf D, Knorz C and Kulla M. On the relationship between mobbing factors, and job content, social work environment, and health outcomes. *European Journal of Work and Organisational Psychology* 1996; 5: 215–237.
- 13 Rayner C and Hoel H. A summary review of literature relating to workplace bullying. *Journal of Community and Applied Social Psychology* 1997; 7: 181–191.
- 14 Rayner C. The incidence of workplace bullying. *Journal of Community and Applied Social Psychology* 1997; 7: 199–208.
- 15 Coyne I, Smith-Lee Chong P, Seigne E and Randall P. Self and peer nominations of bullying. An analysis of incident rates, individual differences and perceptions of the working environment. *European Journal of Work and Organisational Psychology* 2003; 12: 209–228.
- 16 Hoel H and Cooper C L. *Destructive conflict and bullying at work*. University of Manchester unpublished report, 2000. Cited in Hoel H and Giga S I. *Destructive interpersonal conflict in the workplace: the effectiveness of management interventions*. London: British Occupational Health Research Foundation, 2006.
- 17 Andersson M L and Pearson M C. Tit for tat? The spiralling effect of incivility in the workplace. *The Academy of Management Review* 1999; 24 (3): 452–471.
- 18 Cortina L M, Magley V J, Williams J H and Langhout R D. Incivility at the workplace: incidence and impact. *Journal of Occupational Health Psychology* 2001; 6 (1): 64–80.
- 19 Grandey A A, Dickter D N and Sin H. The customer is *not* always right: customer aggression and emotion regulation of service employees. *Journal of Organisational Behaviour* 2004; 25: 397–418.
- 20 Hershcovis M S, Turner N, Barling J, Arnold K A, Dupré K E, Inness M, LeBlanc M M and Sivanathan N. Predicting workplace aggression: a meta-analysis. *Journal of Applied Psychology* 2007; 92: 228–238.
- 21 Aquino K and Lamertz K. A relational model of workplace victimization: social roles and patterns of victimization in dyadic relationships. *Journal of Applied Psychology* 2004; 89 (6): 1023–1034.
- 22 Glomb T M and Liao H. Interpersonal aggression in work groups: social influence, reciprocal, and individual effects. *Academy of Management Journal* 2003; 46 (4): 486–496.
- 23 Barling J, Rogers G A and Kelloway E K. Behind closed doors: in-home workers' experience of sexual harassment and workplace violence. *Journal of Occupational Health Psychology* 2001; 6: 255–269.

- 24 Ben-Zur H and Yagil D. The relationship between empowerment, aggressive behaviours of customers, coping and burnout. *European Journal of Work and Organisational Psychology* 2005; 14 (1): 81–99.
- 25 Evers W, Tomic W and Brouwers A. Aggressive behaviour and burnout among staff of homes for the elderly. *International Journal of Mental Health Nursing* 2002; 11: 2–9.
- 26 Frone M R. Interpersonal conflict at work and psychological outcomes: testing a model among young workers. *Journal of Occupational Health Psychology* 2000; 5: 246–255.
- 27 Hansen A M, Hogh A, Persson R, Karlson B, Garde A H and Ørbaek P. Bullying at work, health outcomes, and physiological stress response. *Journal of Psychosomatic Research* 2006; 60 (1): 63–72.
- 28 Lim S, Cortina L M and Magley V J. Personal and workgroup incivility: impact on work and health outcomes. *Journal of Applied Psychology* 2008; 93: 95–107.
- 29 Mikkelsen E G and Einarsen S. Bullying in Danish work-life: prevalence and health correlates. *European Journal of Work and Organisational Psychology* 2001; 10: 393–413.
- 30 Rogers K A and Kelloway E K. Violence at work: personal and organisational outcomes. *Journal of Occupational Health Psychology* 1997; 2 (1): 63–71.
- 31 Saastamoinen P, Laaksonen M, Leino-Arjas P and Lahelma E. Psychosocial risk factors of pain among employees. *European Journal of Pain* 2009; 13: 102–108.
- 32 Bowling N A and Beehr T A. Workplace harassment from the victim's perspective: a theoretical model and meta-analysis. *Journal of Applied Psychology* 2006; 91 (5): 998–1012.
- 33 Mikkelsen E G and Einarsen S. Relationships between exposure to bullying at work and psychological and psychosomatic health complaints: the role of state negative affectivity and generalised self-efficacy. *Scandinavian Journal of Psychology* 2002; 43: 397–405.
- 34 Kivimäki M, Virtanen M, Vartia M, Elovainio M, Vahtera J and Keltikangas-Järvinen L. Workplace bullying and the risk of cardiovascular disease and depression. *Occupational and Environmental Medicine* 2003; 60: 779–783.
- 35 Kivimäki M, Elovainio M and Vahtera J. Workplace bullying and sickness absence in hospital staff. *Occupational and Environmental Medicine* 2000; 57: 656–660.
- 36 Hogh A, Henriksson M E and Burr H. A five-year follow-up study of aggression at work and psychological health. *International Journal of Behavioural Medicine* 2005; 12 (4): 256–265.
- 37 Brousse G, Fontana L, Ouchchane L, Boisson C, Gerbaud L, Bourguet D, Perrier A, Schmitt A, Llorca P M and Chamoux A. Psychopathological features of a patient population of targets of workplace bullying. *Occupational Medicine* 2008; 58 (2): 122–128.
- 38 Hogh A and Viitasara E. A systematic review of longitudinal studies of nonfatal workplace violence. *European Journal of Work and Organisational Psychology* 2005; 14 (3): 291–313.
- 39 Quine L. Workplace bullying in NHS community trust: staff questionnaire survey. *British Medical Journal* 1999; 318: 228–232.
- 40 Vartia M. Consequences of workplace bullying with respect to the well-being of its targets and the observers of bullying. *Scandinavian Journal of Work, Environment and Health* 2001; 27: 63–69.
- 41 Zapf D, Einarsen S, Hoel H and Vartia M. Empirical findings of bullying in the workplace. In: Einarsen S, Hoel H, Zapf D and Cooper C L (eds). *Bullying and emotional abuse in the workplace: international perspectives in research and practice* (pp. 103–126). London: Taylor and Francis, 2003.
- 42 Vartia M and Hyyti J. Gender differences in workplace bullying among prison officers. *European Journal of Work and Organisational Psychology* 2002; 11 (1): 113–126.
- 43 Duhart D T. *Bureau of Justice Statistics special report: National Crime Victimization Survey: violence in the workplace, 1993–1999*. Available online at www.ojp.usdoj.gov/bjs/pub/pdf/vw99.pdf. Cited in Schat A C H, Frone M R and Kelloway E K. Prevalence of workplace aggression in the US workforce: findings from a national study. In: Kelloway E K, Barling J and Hurrell J J (eds). *Handbook of workplace violence*: Thousand Oaks, California: Sage Publications, 2006.
- 44 Geen R G. *Human aggression* (second edition). Buckingham: Open University Press, 2001.
- 45 McFarlin S K, Fals-Stewart W, Major D A and Justice E M. Alcohol use and workplace aggression: an examination of perpetration and victimisation. *Journal of Substance Abuse* 2001; 13 (3): 303–321.
- 46 Northwestern National Life Insurance Company. *Fear and violence in the workplace: a survey documenting the experience of American workers*. Minneapolis, Minnesota: NNLIC, 1993.
- 47 Guterman N B, Jayaratne S and Bargal D. Workplace violence and victimization experienced by social workers: a cross-national study of Americans and Israelis. In: VandenBos G R and Bulatao E Q (eds). *Violence on the job: identifying risks and developing solutions* (pp. 175–188). Washington, DC: American Psychological Association, 1996.

- 48 Hubert A and Van Veldhoven M. Risk sectors for undesirable behaviour and mobbing. *European Journal of Work and Organisational Psychology* 2001; 10 (4): 415–424.
- 49 Van Emmerik H, Euwema M C and Bakker A B. Threats of workplace violence and the buffering effect of social support. *Group and Organisation Management* 2007; 32: 152–175.
- 50 Carver C S and Scheier M F. Optimism. In: Snyder C R and Lopez S J (eds). *Handbook of positive psychology* (pp. 231–243). New York: Oxford University Press, 2002.
- 51 Ai A L and Park C L. Possibilities of the positive following violence and trauma: informing the coming decade of research. *Journal of Interpersonal Violence* 2005; 20 (2): 242–250.
- 52 Rutter M. Psychosocial resilience and protective mechanisms. In: Rolf J, Masten A S, Cicchetti D, Nuechterlein K H and Weintraub S (eds). *Risk and protective factors in the development of psychopathology* (pp. 181–214). Cambridge: Cambridge University Press, 1990.
- 53 Jackson A, Firtko A and Edenborough M. Personal resilience as a strategy for surviving and thriving in the face of workplace adversity: a literature review. *Journal of Advanced Nursing* 2007; 60 (1): 1–9.
- 54 Nucifora F, Langlieb A M, Siegal E, Everly G E and Kaminsky M. Building resistance, resilience, and recovery in the wake of school and workplace violence. *Disaster Medicine Public Health Preparedness* 2007; 1: S33–S37.
- 55 Einarsen S, Raknes B I, Matthiesen S B M and Hellesøy O H. Bullying at work and its relationships with health complaints – moderating effects of social support and responsibility. *Nordisk Psychologi* 1996; 48: 116–137.
- 56 Watson D, Pennebaker J W and Folger R. Beyond negative affectivity: measuring stress and satisfaction in the workplace. *Journal of Organizational Behavior Management* 1987; 8: 141–157.
- 57 Judge T A, Erez A and Thoresen C J. Why negative affectivity (and self-deception) should be included in job stress research: bathing the baby with the bath water. *Journal of Organisational Behaviour* 2000; 21: 101–111.
- 58 Spector P E, Zapf D, Chen P Y and Frese M. Why negative affectivity should not be controlled in job stress research: don't throw the baby out with the bath water. *Journal of Organisational Behaviour* 2000; 21: 79–95.
- 59 Spector P E and Fox S. The stressor–emotion model of counterproductive work behavior. In Fox S and Spector P E (eds). *Counterproductive work behavior: investigations of actors and targets* (pp. 151–175). Washington, DC: APA, 2005.
- 60 Shadish W R, Cook T D and Campbell D T. *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin Company, 2002.
- 61 Cohen J, Cohen P, West S G and Aiken L S. *Applied multiple regression/correlation analysis for the behavioural sciences* (third edition). Mahwah, New Jersey: Erlbaum, 2003.
- 62 Rogosa D R. A critique of cross-lagged correlation. *Psychological Bulletin* 1980; 88: 245–258.
- 63 Locascio J L. The cross-lagged correlation technique: reconsideration in terms of exploratory utility, assumption specification and robustness. *Educational and Psychological Measurement* 1982; 42: 1023–1037.
- 64 Podsakoff P M, MacKenzie S B, Lee J and Podsakoff N P. Common method biases in behavioural research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology* 2003; 88: 879–903.
- 65 Warr P. The measurement of well-being and other aspects of mental health. *Journal of Occupational Psychology* 1990; 63: 193–210.
- 66 Maslach C and Jackson S E. *The Maslach Burnout Inventory* (second edition). Palo Alto, California: Consulting Psychologists Press, 1986.
- 67 Horowitz M J, Wilner N and Alvarez W. Impact of Event Scale: a measure of subjective stress. *Psychosomatic Medicine* 1979; 41: 209–218.
- 68 Goldberg D P. *The detection of psychiatric illness by questionnaire: a technique for the identification and assessment of non-psychotic psychiatric illness*. London: Oxford University Press, 1972.
- 69 Schat A, Kelloway E K and Desmarais S. The Physical Health Questionnaire. *Journal of Occupational Health Psychology* 2005; 10: 363–381.
- 70 Caplan R D, Cobb S, French J R P, Van Harrison R and Pinneau S R. *Job demands and worker health: main effects and occupational differences*. Washington, DC: US Government Printing Office, 1980.
- 71 Jackson P, Wall T, Martin R and Davids K. New measures of job control, cognitive demand, and production responsibility. *Journal of Applied Psychology* 1993; 78 (5): 753–762.
- 72 Wall T D, Jackson P R and Mullarkey S. Further evidence on some new measures of job control, cognitive demand and production responsibility. *Journal of Organisational Behaviour* 1995; 16: 431–456.

- 73 O'Hara R. *Occupational health and musculoskeletal pain at work: an investigation of individual and organisational factors*. University of Sheffield: unpublished PhD thesis, 1999.
- 74 Scheier M F and Carver C S. Optimism, coping, and health: assessment and implications of generalized outcome expectancies. *Health Psychology* 1985; 4 (3): 219–247.
- 75 Luthans F, Youssef C M and Avolio B J. *Psychological capital*. New York: Oxford University Press, 2007.
- 76 Wagnild G M and Young H M. Development and psychometric evaluation of the resilience scale. *Journal of Nursing Measurement* 1993; 1: 165–178.
- 77 Robins R W, Hendin H M and Trzesniewski K H. Measuring global self-esteem: construct validation of a single-item measure and the Rosenberg self-esteem scale. *Personality and Social Psychology Bulletin* 2001; 27: 151–161.
- 78 Watson D, Clark L A and Tellegen A. Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology* 1988; 54: 1063–1070.
- 79 Greenberg L and Barling J. Predicting employee aggression against coworkers, subordinates and supervisors: the roles of person behaviours and perceived workplace factors. *Journal of Organisational Behaviour* 1999; 20: 897–913.
- 80 Nielsen M B, Skogstad A, Matthiesen S B, Glasø L, Aasland M S, Notelaers G and Einarsen S. Prevalence of workplace bullying in Norway: comparisons across time and estimation methods. *European Journal of Work and Organisational Psychology* 2009; 18 (1): 81–101.
- 81 Notelaers G, Einarsen S, De Witte H and Vermunt J K. Measuring exposure to bullying at work: the validity and advantages of the latent class cluster approach. *Work and Stress* 2006; 20: 288–301.
- 82 Vartiainen M. The sources of bullying: psychological work environment and organisational climate. *European Journal of Work and Organisational Psychology* 1996; 5 (2): 215–237.
- 83 Leymann H. Mobbing and psychological terror at workplaces. *Violence and Victims* 1990; 5: 119–126.
- 84 Agervold M. Bullying at work: a discussion of definitions and prevalence, based on an empirical study. *Scandinavian Journal of Psychology* 2007; 48: 161–172.
- 85 Bilgel N, Aytac S and Bayram N. Bullying in Turkish white-collar workers. *Occupational Medicine* 2006; 56: 226–231.
- 86 Pearson, C M and Porath C L. On the nature, consequences and remedies of workplace incivility: No time for 'nice'? Think again. *Academy of Management Executive* 2005; 19: 7–18.
- 87 Aquino K. Structural and individual determinants of workplace victimization: the effects of hierarchical status and conflict management style. *Journal of Management* 2000; 26 (2): 171–193.
- 88 Tripp T M. Power and fairness in negotiations. *Social Justice Research* 1993; 6 (1): 19–38.
- 89 Notelaers G. Distinguishing between targets and non-targets of bullying: applying a roc-analysis to the Negative Acts Questionnaire. Paper presented at the 14th European Congress of Work and Organisational Psychology, Santiago de Compostela, Spain, 15 May 2009.
- 90 Hobfoll S E. Conservation of resources. A new attempt at conceptualizing stress. *The American Psychologist* 1989; 44 (3): 513–524.
- 91 Health and Safety Executive. Management Standards for work-related stress. www.hse.gov.uk/stress/standards/index.htm.
- 92 Parker S K and Wall T D. *Job and work design. Organizing work to promote well-being and effectiveness*. London: Sage, 1998.
- 93 Matthiesen S B and Einarsen S. Perpetrators and targets of bullying at work: role stress and individual differences. *Violence and Victims* 2007; 22: 735–753.
- 94 Baumeister R, Smart L and Boden J. Relation of threatened egotism to violence and aggression: the dark side of high self-esteem. *Psychological Review* 1996; 103: 5–33.
- 95 Zapf D and Einarsen S. Individual antecedents of bullying: victims and perpetrators. In: Einarsen S, Hoel H, Zapf D and Cooper C L (eds). *Bullying and emotional abuse in the workplace: international perspectives in research and practice* (pp. 165–184). London: Taylor and Francis, 2003.
- 96 Seligman M E P. *Learned optimism: how to change your mind and your life*. New York: Vintage Books, 2006.
- 97 Porath C and Erez A. Overlooked but not untouched: how rudeness reduces onlookers' performance on routine and creative tasks. *Organisational Behaviour and Human Decision Processes* 2009; 109 (1): 29–44.
- 98 Frederickson B L. *Positivity*. New York: Crown Publishers, 2009.
- 99 Lyubomirsky S. *The how of happiness*. London: Sphere, 2007.
- 100 Estes B and Wang J. Integrative literature review: workplace incivility: impacts on individual and organisational performance. *Human Resource Development Review* 2008; 7 (2): 218–240.

- 101 Baron R A and Neuman J H. Workplace violence and workplace aggression: evidence of their relative frequency and potential causes. *Aggressive Behavior* 1996; 22: 161–173.
- 102 Beech B and Leather P. Workplace violence in the health care sector: a review of staff training and integration of training evaluation models. *Aggression and Violent Behaviour* 2006; 11: 27–43.
- 103 Mullarkey S, Wall T D, Warr P B, Clegg C W and Stride C. *Measures of job satisfaction, mental health and job-related well-being*. Sheffield: Sheffield Academic Press, 1999.
- 104 Spence J T, Helmreich R L and Pred R S. Impatience versus achievement strivings in the Type A pattern: differential effects on students' health and academic achievement. *Journal of Applied Psychology* 1987; 72: 522–528.
- 105 Cook J D and Wall T D. New work attitude measures of trust, organizational commitment and personal need non-fulfillment. *Journal of Occupational Psychology* 1980; 53: 39–52.
- 106 Rosenberg M. *Society and adolescent self-image*. Princeton, New Jersey: Princeton University, 1965.

All rights reserved. Permission to reproduce any part of this work will not be withheld unreasonably, on condition that full attribution is given to the publication and to IOSH.

While this paper reports on research that was funded by IOSH, the contents of the document reflect the views of the authors, who are solely responsible for the facts and accuracy of the data presented. IOSH has not edited the text in any way, except for essential formatting requirements. The contents do not necessarily reflect the views or policies of IOSH.

All web addresses are current at the time of going to press. The publisher takes no responsibility for subsequent changes.

© IOSH 2010
Published by IOSH
The Grange
Highfield Drive
Wigston
Leicestershire
LE18 1NN
UK

+44 (0)116 350 0700
www.iosh.com

IOSH is the Chartered body for health and safety professionals. With over 50,000 members in more than 130 countries, we're the world's largest professional health and safety organisation.

We set standards and support, develop and connect our members with resources, guidance, events and training. We're the voice of the profession and campaign on issues that affect millions of working people.

IOSH was founded in 1945 and is a registered charity with international NGO status.

IOSH
The Grange
Highfield Drive
Wigston
Leicestershire
LE18 1NN
UK

 twitter.com/IOSH_tweets
 facebook.com/IOSHofficial
 tinyurl.com/IOSH-linkedin
 youtube.com/IOSHchannel
 instagram.com/ioshofficial

+44 (0)116 350 0700
www.iosh.com

Institution of Occupational Safety and Health
Founded 1945
Incorporated by Royal Charter 2003
Registered charity in England and Wales No. 1096790
Registered charity in Scotland No. SC043254