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Exploring the impact of workplace cyberbullying on trainee doctors

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Objectives: Workplace bullying is an occupational hazard for trainee doctors. However little is known about their experiences of cyberbullying at work. This study examines the impact of cyberbullying among trainee doctors, and how attributions of blame for cyberbullying influenced individual and work-related outcomes.

Methods: Doctors at over six months into training were asked to complete an online survey that included measures of cyberbullying, blame attribution, negative emotion, job satisfaction, interactional justice and mental strain. In total, 158 trainee doctors (104 women, 54 men) completed the survey.

Results: Overall, 73 (46.2%) respondents experienced at least one act of cyberbullying. Cyberbullying adversely impacted on job satisfaction (β=-0.19; $p < .05$) and mental strain (β=0.22; $p < .001$), although attributions of blame for the cyberbullying influenced its impact and the mediation path. Negative emotion mediated the relationship between self-blame for a cyberbullying act and mental strain; whereas interactional injustice mediated the association between blaming the perpetrator and job dissatisfaction.

Conclusions: Cyberbullying acts were experienced by nearly half of the sample during their training and were found to significantly relate to ill-health and job dissatisfaction. The deleterious impact of cyberbullying can be addressed through both workplace policies and training for trainee doctors and other experienced medical professionals.

Introduction

During the past fifteen years research on workplace bullying has spread from origins in Scandinavia across Europe and beyond[1]. Within this global research base, evidence suggests that bullying occurs more in some occupational sectors than others, with studies identifying higher levels of bullying in the health sector[2,3], particularly among trainee doctors[4,5]. Recent research has revealed that trainee doctors are engaging with various forms of technology in relation to their work[6,7]. Given this context, the current paper considers the extent that trainee doctors' experience bullying through technology, otherwise known as cyberbullying.

Cyberbullying research has typically been conducted in school settings; with limited research conducted among working populations[8,9] and much atheoretical in nature. Cyberbullying has been defined as "an aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself"[10] (p.376). It can occur at any time or place[11], some perpetrators can remain anonymous[12] and there is a permanence associated with certain cyber acts. Given the nature of cyberbullying, it has been suggested that it exerts a stronger impact on targets than offline bullying[13]. We are unaware of previous research which has examined the impact of cyberbullying on trainee doctors. Our research therefore uses two theoretical frameworks to help theorise how cyberbullying influences individual and work-related outcomes.

Firstly, dysempowerment theory[14] states that when a negative workplace event is perceived by the victim as violating their dignity, it triggers a negative affective reaction which influences attitudes and well-being. Dysempowerment theory can therefore aid our understanding of how cyberbullying might produce negative outcomes as it can violate dignity and norms of respect - resulting in a strong dysempowerment process. However the theory does not illustrate how individuals arrive at the conclusion regarding who to blame for polluting acts, nor how blame attributions influence perceptions of whether ones dignity has

been violated. The extent to which an event is dysempowering may depend on how blame for that event is attributed. We therefore extend dysempowerment theory by using the attributional model of workplace harassment[15].

The attributional model of workplace harassment[15] proposes that the way victims attribute blame for harassment influences how fairly they perceive their work situation, and subsequent well-being, attitudes and behaviours. Specifically, when individuals blame themselves for being harassed, they experience reduced well-being. This proposition is based on the notion that internalising a negative event will result in greater negative affect, which in turn causes ill-health[16,17]. When an individual blames him/herself for experiencing harassment they are unlikely to perceive that their dignity has been violated as they may feel that they deserved negative treatment. However dysempowerment may still occur, because attributing blame for negative events internally has been linked to negative emotions including shame[18] and guilt[19], which may produce detrimental outcomes.

In contrast, when individuals blame the perpetrator for harassment a perception that one's dignity has been violated is hypothesised to occur. Here we conceptualise dignity as interactional justice, which refers to the quality of interpersonal treatment, including the extent that individuals feel treated with dignity, respect, truthfulness and propriety[20]. Empirical evidence indicates that individuals who attribute blame for harassment externally are less likely to experience psychological ill-health than those who attribute blame internally[21]. Yet, research has linked interactional injustice to lower job satisfaction, life satisfaction and organisational commitment[22]. Thus blaming the perpetrator may act as a separate route to dysempowerment (see figure 1).

Insert Figure 1 here

This study addresses the following key questions. How prevalent is cyberbullying among trainee doctors? What is the impact of workplace cyberbullying and does this vary according to how trainee doctors place the blame for their cyberbullying experiences?

Method

Design and Procedure

The respondents were first year trainee doctors (who were more than six months into their training) and second year trainee doctors on the foundation programme. The aim of the foundation programme is to 'provide broad clinical experience with a focus on acute care'[23]. A competency based curriculum prescribes learning and development in such areas as professionalism, safety, ethical and legal issues and patient relationships[24]. Data was gathered using an online self-report survey which was distributed by foundation programme management to trainee doctors across eight different UK NHS Trusts, via a link embedded in an email. The survey included an information page and participants were given the option to withdraw by closing down the survey. No incentive was offered for survey completion and it was sent to 1996 trainee doctors in total. The final sample consisted of 158 respondents, 104 females (66%) and 54 males (34%), with a mean age was 27 years (SD = 4.79). The response rate of 7.9% is low, although this was expected due to the sensitive nature of the study. For instance, research on workplace cyberbullying in the Australian manufacturing sector reported a similar response rate of 7.3%[25]. Furthermore, the gender split of the sample is comparable to gender split data of the trainee doctor population in 24 of the 25 foundation schools, which was reported as 59.8% female (F1 programme) and 58.9% female (F2 programme) in 2013[26]. Ethical approval was obtained from Sheffield University Management School and the University of Nottingham.

Study Measures

All variable measures were included in the online survey and participants navigated through the survey web pages using a 'next' button. The validated and reliable cyber negative acts questionnaire (CNAQ)[9] was used to measure cyberbullying. The CNAQ is an adapted version

of the negative acts questionnaire revised (NAQr)[27], used to measure workplace cyberbullying behaviours. Respondents were asked how often they had experienced 19 bullying behaviours through eight forms of technology (1. text messaging, 2. pictures/photos or video clips, 3. phone calls, 4. email, 5. chat rooms, 6. instant messaging 7. websites, 8. social networking websites). An example item was: 'Hints or signals from others that you should quit your job'. The five-point response scale was: *'never', 'now or then', 'monthly', 'weekly'* and *'daily'*. An alpha coefficient of 0.85 was obtained from the sample. Respondents were given the option of reporting who perpetrated the majority of the cyberbullying (e.g. managers, consultants, other trainees, nurses, patients of relatives, other).

Blame attribution was measured using items adapted from internationally recognised research[21, 28]. After reporting their experience of cyberbullying behaviours, respondents were asked to rate the extent to which they agreed with the following statements: "I am partly to blame for this behaviour towards me" (self-blame) and "The perpetrator is to blame for this behaviour towards me" (perpetrator-blame). The word 'partly' was used in the self-attribution item as it has been suggested that this reduces the probability of ego-defensive responding[17].

State negative affect was measured using the 10-item NA scale of the PANAS scales[29], which measures the degree to which an individual is generally feeling upset or unpleasantly aroused. The PANAS is a widely used, validated measure that has evidence of reliability[30]. Respondents were asked to state the extent they had felt a particular emotion over the last two weeks, such as being ashamed, hostile, jittery, or scared. Response categories were: *'very slightly', 'a little', 'moderately', 'quite a bit',* and *'extremely.'* An alpha coefficient of 0.92 was obtained in the current study.

Interactional justice was measured with a three item scale developed by Bies and Moag[20] which measures the extent that participants felt treated with dignity and respect at work. A

sample item was: "At work I am treated with dignity". The response categories were: *very slightly' or 'not at all', 'a little', 'moderately', 'quite a bit' and, 'extremely.'* The alpha level in the current study was 0.95.

Job satisfaction was assessed using a single-item measure[31] that has been extensively applied and published in prominent journals[32]. Respondents were asked "Overall, how satisfied are you with your job?" The response category was: *'very dissatisfied', 'dissatisfied', 'neutral', 'satisfied',* and 'very satisfied'.

Mental strain was assessed with the 12-item General Health Questionnaire (GHQ-12)[33] which assesses general mental health or psychological distress. Each item assesses symptoms of general mental strain over the past few weeks, with higher scores representing more strain. Internal consistency was shown to be high in this sample (Alpha = 0.90)

Control Variables

Several control variables were used (age, gender and general job stress) to assess whether cyberbullying had a unique relationship with the outcome variables. General job stress was assessed using the seven-item 'Pressure' subscale of the 'Stress in General' (SIG) scale[34] (Alpha = 0.89 in this sample). This scale assesses general perceived strain, rather than strain that is tied to a specific stressor. Participants were asked to respond to seven adjectives that could describe their job, including "demanding", "pressured" and "calm". The response categories were *'yes', 'no'* and *'unsure'.*

Results

Parametric methods were used to analyse the data. It has been suggested that parametric statistics cannot be applied to ordinal, Likert scale data[35] because this data reflects qualitative statements and therefore the gaps between intervals cannot be assumed as equal. However, researchers defending the use of parametric techniques on ordinal data argue that Likert scales involving sums across items are likely to be ordinal, and parametric techniques have been shown to be robust, even when data is skewed and not normally distributed[36]. As such, parametric tests are appropriate to analyse the current data.

Prevalence

A total of 73 respondents (46.2%) had experienced at least one cyberbullying act, with fellow trainees reported as the main perpetrators (35.6% = 26 respondents). Other than trainees, 26.0% (19) of respondents cited consultants as the perpetrator, 19.2% (14) reported managers, 13.7% (10) cited an unspecified source, 4.1% (3) reported nurses and 1.4% (1) reported patients or relatives as responsible.

Cyberbullying was significantly negatively correlated with job satisfaction (r = -.29) and significantly positively correlated with mental strain (r = .36). Hierarchical regression analysis confirmed the relationships between these variables whilst controlling for age, gender and general job stress (see Table 1).

Insert Table 1 here

To examine mediation effects, bootstrapping procedures were adopted with accelerated estimates based on 5000 re-samples and 95% confidence intervals (BCas)[37]. Bootstrapping has higher power and control over Type 1 errors than the Baron and Kenny[38] and Sobel[39] methods. Point estimates of indirect effects are considered significant when zero is not contained in the 95 per cent confidence intervals[40]. Kappa-squared (the proportion of the

total effect shown by a sample) was used to assess the effect size of the mediation relationships. A Kappa-squared value of .01 is considered small, values near .09 are medium and values around .25 represent a large effect[41].

Analysis of the impact of cyberbullying on mental strain and job satisfaction found that negative affect showed a large mediation effect in the relationship between cyberbullying and mental strain (K^2=.28). Comparatively, interactional injustice mediated the cyberbullying job satisfaction relationship (K^2=.19) (Table 2). The indirect effect of interactional injustice on mental strain and negative affect on job satisfaction were tested, although these relationships were shown to be non-significant (Table 2). This suggests that cyberbullying exerts an effect on each outcome via separate routes.

Regarding the path between cyberbullying and mental strain, it was hypothesised that self-blame would mediate the relationship between cyberbullying and negative affect (Figure 1). Furthermore, it was hypothesised that negative affect would mediate the relationship between self-blame and mental strain. Support was only found for the latter hypothesis, which suggests that when trainee doctors blame themselves for experiencing cyberbullying, a negative affective reaction occurs which may lead to mental strain (K^2=.27).

Analysis supported the hypotheses of perpetrator blame mediating the cyberbullying and interactional injustice relationship (K^2=.07); and interactional injustice mediating the perpetrator blame and job satisfaction relationship (K^2=.25). This suggests that when blame is attributed externally a dignity violation may occur, which can lead to negative work attitudes.

Insert Table 2 here

Discussion

This study used dysempowerment theory and the attributional model of workplace harassment to investigate the impact of cyberbullying on trainee doctors. Results suggest that dysempowerment may occur even when an individual's dignity has not been violated as negative affect mediated the association between self-blame for cyberbullying and mental strain. This is consistent with past research indicating that the extent to which an individual blames themselves for traumatic events (e.g. rape, divorce) relates negatively to well-being[42,43]. These interactions could have occurred because doctors who believed they were at fault for experiencing cyberbullying may have reduced self-esteem by perceiving that they were responsible for the acts. For example, if a trainee doctor makes a mistake during work and is subsequently abused for that mistake via email, they may perceive that they have brought the abuse on themselves due to a lack of ability.

The impact cyberbullying exerted on job satisfaction was found to develop along a separate path to that of mental strain. Blaming the perpetrator for cyberbullying mediated the relationship between cyberbullying and interactional justice. This has theoretical implications as it suggests that a dignity violation may only occur when blame for a polluting event is attributed externally. Moreover, interactional injustice mediated the relationship between perpetrator directed attributions and job satisfaction, indicating that although trainee doctors who make external attributions for cyberbullying are possibly shielded from ill-health, an adverse effect is seen in their work attitudes.

Practical Implications

This study has implications for foundation doctor training. The relationship between self-blame, negative affect and mental strain demonstrates that individuals who tend to attribute blame internally are possibly more at risk of developing ill-health. NHS Trusts could therefore

monitor individuals with a tendency to self-blame to prevent these unhelpful cognitions. In respect to the link between perpetrator blame, interactional injustice and job satisfaction, it has been suggested that more misunderstandings occur during online communication[44], which may lead trainees to mistakenly perceive cyberbullying even when the sender meant no ill-intent. To prevent such misunderstandings, NHS policy[45] encourages staff to think about whether electronic communication is appropriate for the matter they want to discuss. The policy also encourages health professionals to evaluate whether the tone of a correspondence could be misinterpreted by the recipient, as evidence suggests that people find emotion communicated through email difficult to interpret[46].

Interestingly, 26 (35.6%) respondents cited other trainees as being mainly responsible for cyberbullying. This is a surprising finding given offline bullying research generally finds that supervisors and managers are the main perpetrators[47]. One possible explanation is that colleagues at the same occupational level take less care when communicating with each other through computer mediated communication, as Postmes, Spears and Lea[48] found that emails sent to higher status individuals are more formal. Thus, emails sent to peers may appear rude in comparison, which could be misconstrued as bullying. Additionally, an estimated 90% of medical students use online social media[49], which can be a platform for cyberbullying.

In response to the growing use of social media within the medical profession, it has been advised that professionals consider how online interactions could affect their career and the broader medical community[50]. In this respect, professionals are encouraged to think about their online interactions using the analogy of the "digital footprint", with each online action leaving a record and potential consequence. The American Medical Association has issued guidelines on the professional use of social media which includes advice on posting sensitive information, maintaining professional boundaries and privacy settings. Such information

could be used to educate trainees and experienced medical professionals on how social media can be best integrated into their professional lives.

Limitations and Future Research

The study used a cross-sectional design which prohibits the investigation of causal processes between the study variables. In addition, the low response rate limits the generalisability of the findings as the sample may not be representative of the trainee doctor population. For instance, because participants were able to self-select their participation in the research, individuals who were not affected by cyberbullying may be underrepresented. However the low response rate does not negate the value of our findings as the study offers insights on the impact of cyberbullying among doctors who experience it. Future research needs to consider using multiple data sources and time points as this would enable a better understanding of the relationships between cyberbullying, emotion and health. Other researchers could also explore the behavioural outcomes of specific attributions and how these relate to theoretical understandings of coping strategies.

Conclusion

Advances in technology mean that health professionals are now required to be competent with computer systems, as well as technology mediated communication. Increased communication through technology mediated channels increases the potential for cyberbullying. The current study suggests that cyberbullying relates to job dissatisfaction and mental strain, however the impact is dependent on the way trainee doctors attributed blame for their experience. Given these initial findings, more research is needed to better understand the nature of cyberbullying and its impact in health care contexts.

Figures and Tables

Figure 1: The Hypothesised Model
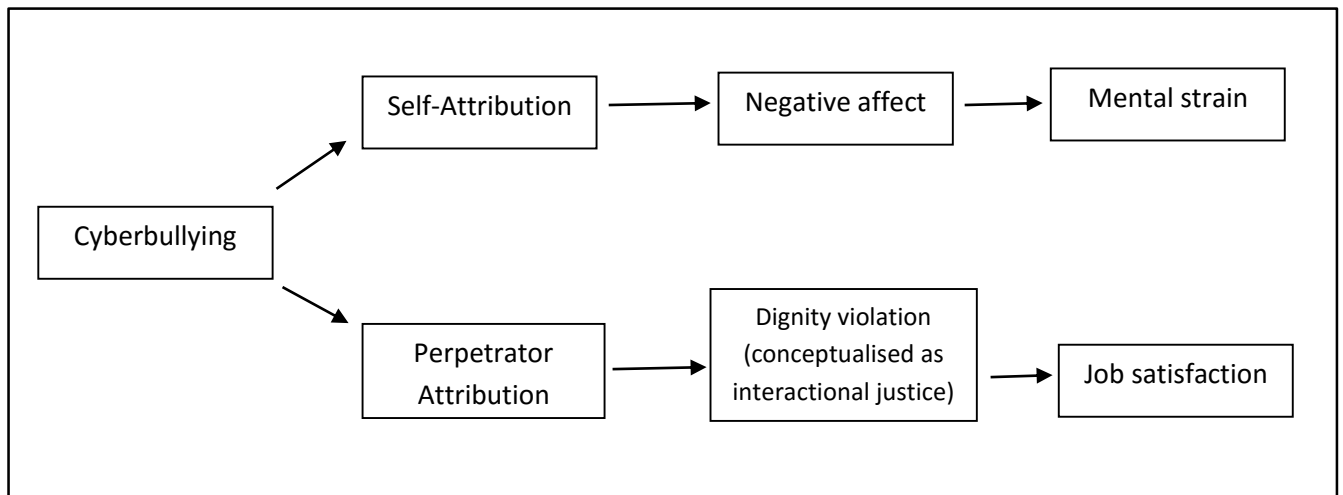
Table 1: Regression results of cyberbullying on mental strain and job satisfaction

Criteria and predictors	Adjusted R2	R2 Change	β	F (d.f. 1, d.f. 2)
Mental strain				
Model 1: Demographics	.255***	.270		18.01 (3, 146)
Model 2: Cyberbullying	.294***	.043**	.216	16.49 (4, 145)
Job satisfaction				
Model 1: Demographics	.190***	.206		12.55 (3, 145)
Model 2: Cyberbullying	.216*	.031*	-.185	11.18 (4, 144)

* p<0.05; ** p<0.01; *** p<0.001. Standardized betas presented for the final model.

			Point estimate	BCa 95% CI		K^2
Table 2: Bootstrapping analysis of mediation relationships						
IV	Mediator	Outcome	Point estimate	BCa 95% CI		K^2
Dysempowerment Relationships				Lower	Upper	
Cyberbullying	Negative affect	Mental strain	.0134	.0050	.0250	.283
Cyberbullying	Negative affect	Job satisfaction	.0052	-.0031	.0194	.041
Cyberbullying	Interactional justice	Job satisfaction	-.0200	-.0372	-.0066	.191
Cyberbullying	Interactional justice	Mental strain	.0022	-.0011	.0073	.108
Attribution Relationships						
Cyberbullying	Self-blame	Negative affect	-.0035	-.0129	.0006	.044
Self-blame	Negative affect	Mental strain	.0683	.0236	.1405	.267
Cyberbullying	Perpetrator blame	Interactional justice	-.0154	-.0355	-.0042	.073
Perpetrator attribution	Interactional justice	Job satisfaction	-.0958	-.1789	-.0384	.248

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