

---

This item was submitted to [Loughborough's Research Repository](#) by the author.  
Items in Figshare are protected by copyright, with all rights reserved, unless otherwise indicated.

## **Understanding the relationship between experiencing workplace cyberbullying, employee mental strain and job satisfaction: a dysempowerment approach**

PLEASE CITE THE PUBLISHED VERSION

<http://dx.doi.org/10.1080/09585192.2015.1116454>

PUBLISHER

© Taylor & Francis

VERSION

AM (Accepted Manuscript)

PUBLISHER STATEMENT

This work is made available according to the conditions of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0) licence. Full details of this licence are available at: <https://creativecommons.org/licenses/by-nc-nd/4.0/>

LICENCE

CC BY-NC-ND 4.0

REPOSITORY RECORD

Coyne, Iain, Samuel Farley, Carolyn Axtell, Christine A. Sprigg, Luke Best, and Odilia Kwok. 2019. "Understanding the Relationship Between Experiencing Workplace Cyberbullying, Employee Mental Strain and Job Satisfaction: A Dysempowerment Approach". figshare. <https://hdl.handle.net/2134/20808>.

**Understanding the relationship between experiencing workplace cyberbullying, employee  
mental strain and job satisfaction: A dysempowerment approach**

Iain Coyne<sup>1</sup>, Sam Farley<sup>2</sup>, Carolyn Axtell<sup>2</sup>, Christine A. Sprigg<sup>2</sup>, Luke Best<sup>1</sup> and Odilia Kwok<sup>1</sup>

<sup>1</sup> Department of Psychiatry and Applied Psychology, University of Nottingham, UK

<sup>2</sup> Institute of Work Psychology, Sheffield University Management School, UK

Correspondence to Dr Iain Coyne, Division of Psychiatry and Applied Psychology, University of Nottingham, International House, Jubilee Campus, Wollaton Road, Nottingham NG8 1BB, UK (Tel: ++44 115 8466639; e-mail: [iain.coyne@nottingham.ac.uk](mailto:iain.coyne@nottingham.ac.uk)).

### **Abstract**

Although the literature on traditional workplace bullying is advancing rapidly, currently investigations addressing workplace cyberbullying are sparse. To counter this, we present three connected research studies framed within dysempowerment theory (Kane and Montgomery, 1998) which examine: the relationship between volume and intensity of cyberbullying experience and individual mental strain and job satisfaction; whether the impact is more negative as compared to traditional bullying; and whether state negative affectivity (NA) and interpersonal justice mediate the relationship. Additionally we also considered the impact of witnessing cyberbullying acts on individual outcomes. A total sample comprised 331 UK university employees across academic, administrative, research, management and technical roles. Overall, significant relationships between cyberbullying exposure and outcomes emerged, with cyberbullying exposure displaying a stronger negative relationship with job satisfaction when compared to offline bullying. Analysis supported an indirect effect between cyberbullying acts and outcomes via NA and between cyberbullying acts and job satisfaction via interpersonal justice. No support for a serial multiple mediation model of experiencing cyberbullying to justice to NA to outcome was found. Further, perceived intensity of cyberbullying acts and witnessing cyberbullying acts did not significantly relate to negative outcomes. Theoretical and practical implications of the research are discussed.

Keywords: Cyberbullying; workplace bullying; general health; job satisfaction, dysempowerment

## **Understanding the relationship between experiencing workplace cyberbullying, employee mental strain and job satisfaction: A dysempowerment approach.**

Bullying research has spanned a wide variety of social settings including prisons, care homes, the home, and the workplace (Monks & Coyne 2011). At work, bullying has significant consequences for employees (Samnani & Singh, 2012) and it presents a financial cost for organisations as it has been estimated that it may cost UK organisations £13.75 billion annually (Giga, Hoel & Lewis, 2008). More recently, there has been an increasing awareness and emerging focus on cyberbullying. Perhaps reflecting parental, media or wider societal concerns, much of this research has focused on cyberbullying amongst children or youth samples and by comparison workplace cyberbullying has received little attention. Yet from a HR-perspective it's important to consider the working context because evidence suggests most employees prefer communicating via phone or email rather than talking face-to-face (Advisory, Conciliation and Arbitration Service [ACAS], 2012) and as a result workplace bullying may evolve more towards technological formats. While the increasing research on cyberbullying in adolescents and on offline workplace bullying suggests both to be a serious problem, there is a lack of focus on cyberbullying in work settings. Where such research exists, it is limited in scope because it either focuses solely on email harassment (Baruch, 2005) or cyber-incivility (Giumetti, et al. 2012). As debated by Hershcovis (2011) incivility is different from bullying because it captures low intensity deviant acts, whereas bullying is considered to be high intensity. Clearly there is a need to extend this embryonic research area to help us understand what constitutes workplace cyberbullying, why does it happen, and (the focus of this paper) what is the impact of workplace cyberbullying.

### **Conceptualising cyberbullying**

Cyberbullying is 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” (Smith et al. 2008: 376). It comprises written-verbal acts (e.g. abusive emails), visual acts (e.g. posting an embarrassing video on a web site), exclusion and impersonation (Nocentini et al. 2010). Researchers investigating cyberbullying in the youth context have maintained that certain features indicate cyberbullying is different to traditional (offline) bullying (Kowalski et al. 2008; Tokunaga, 2010). Such features are: a) anonymity afforded by the technology which allows the perpetrator to become ‘invisible’; b) lack of supervision in cyberspace; c) reach of technology, so that an individual can potentially be faced with cyberbullying at all times; d) increased breadth of the potential audience witnessing the bullying behaviour; and e) increased repetition of behaviour via repeated viewing of an act or via repeated posting from other individuals viewing the act. However, definitions of cyberbullying closely align with definitions of offline bullying; suggesting cyberbullying should be considered simply as bullying conducted in cyberspace (Campbell, 2005). For example, Li (2008: 224) conceptualised cyberbullying as: “Bullying via electronic communication tools...” and definitions by Smith et al. (2008) and Besley (2009) stress notions of harm and repetition, which are seen as key criteria in offline youth bullying research.

Within a work context, although cyberbullying has yet to be fully conceptualised, other constructs have emerged. Weatherbee and Kelloway (2006) coined the term cyberdeviancy to refer to a broad construct that encompasses all forms of ICT misuse in organisations. As an individual form of cyberdeviancy, they define cyberaggression as “aggression expressed in a communication between two or more people using ICTs, wherein at least one person in the communication aggresses against another in order to effect harm.” (p.461). By contrast, cyber incivility is defined as “communicative behaviour exhibited in computer-mediated interactions

that violate workplace norms of mutual respect” (Lim & Teo, 2009, p.419). Akin to that seen for cyberbullying, both conceptualisations map closely to their corresponding offline concepts.

In relation to this research, we contend that workplace cyberbullying differs conceptually from cyberaggression and cyber incivility in that it refers to frequent behaviours over time and not a one-off incident. Further, it differs from cyberaggression because it generally does not consider the involvement of organisational outsiders and from cyber incivility as it is focused on higher intensity behaviours. We also suggest that parallels can be drawn from the school cyberbullying research in conceptualizing workplace cyberbullying as simply ‘traditional bullying via electronic media’, although unlike the school research, we argue that intent should not be a defining characteristic of workplace cyberbullying. Researchers suggest that intent to harm is not a relevant criterion in the workplace because perpetrators can mask their true intentions to rationalise their behaviour to others (Samnani, Singh & Ezzedeen, 2013) or simply deny it was negatively intended (Rayner & Cooper, 2006). As cyberbullying acts often leave a trail (e.g. emails, text messages), perpetrators may be even more careful to disguise cyberbullying behaviours. Additionally, perpetrators may enact cyberbullying without necessarily intending to harm the target. For instance, a manager driven to succeed may use bullying tactics to elevate staff performance, such as embarrassing underperforming employees in group emails, or by being overly critical of an employees work. Therefore, our approach to assess workplace cyberbullying in the current study was to conceptualize it as repeated and enduring negative behaviour in the workplace that occurs via technology.

### **Consequences of cyberbullying**

At the individual level, targets of offline workplace bullying experience a wide variety of psychological, psychosomatic and physiological effects of being bullied at work (see Coyne, 2011). Negative impacts of bullying on the organization include reduced individual and team

performance (Coyne, Craig, & Smith-Lee Chong, 2004), low job satisfaction and commitment (Bowling & Beehr 2006), increased absenteeism (Kivimaki, Elovainio, & Vahtera, 2000), higher turnover intention (Djurkovic, McCormack & Casimir, 2004) and higher actual employee turnover (Rayner, 1997).

Within a cyber-context, we are increasingly aware that in youth samples cyberbullying negatively impacts on psychological well-being with victims experiencing distress, sadness, hurt, anger, frustration, anxiety and depression (Juvonen & Gross, 2008; Ybarra, Mitchell, Wolak, & Finkelhor, 2006). By contrast, evidence of individual and organizational outcomes of workplace cyberbullying is sparse. The research that does exist shows links with anxiety, job dissatisfaction, intention to leave (Baruch, 2005); general well-being (Ford, 2013) and sick leave (Association of Teachers and Lecturers [ATL], 2009). Any form of bullying represents a direct, indirect or reputational cost for an organization, yet cyberbullying has the potential to increase these costs to the organization when it is enacted on the internet. For example, in April 2014 it was reported that one in five British workers had criticised their boss on social networking sites (Metro, 2014), which may lead those viewing the criticism to develop negative attributions about how attractive such an organization is to work in.

Critically, Rivers et al., (2011, p.223) state, “Much of the research that has been done on cyberbullying ... has been applied with little consideration of the theoretical ideas that may explain the phenomenon.” Therefore, our study is theoretically driven and adopts dysempowerment theory (Kane & Montgomery, 1998) as the framework to understand how cyberbullying may lead to negative individual and organizational outcomes. Dysempowerment theory suggests that an employee’s appraisal of a ‘polluting’ work event as a violation of his/her dignity results in a perception of subjective stress, leading to negative affect which in turn disrupts the employee’s attitudes and behaviour at work. Further, the greater the volume of

polluting acts perceived by an employee, the stronger the potential for dysempowerment. Therefore, dysempowerment theory is a particularly appropriate framework for studying cyberbullying as a target of workplace cyberbullying may perceive a series of bullying events as a violation of dignity and exhibit a negative affective response. This response then impacts on the individual's attitudes and behaviour. Lim and Teo (2009) have supported the dysempowerment process in relation to workplace cyber-incivility, finding negative relationships with job satisfaction and organizational commitment and positive relationships with turnover intention and organizational deviance. Lim, Cortina, and Magley (2008) also show that by including chronic stress models (e.g. Lazarus & Folkman 1987), the dysempowerment process of offline incivility results in poorer individual mental and physical health.

In summary, there is a clear need to conduct further workplace cyberbullying research to better understand its individual and organizational effects. The current research will contribute to the existing understanding of workplace cyberbullying by using dysempowerment theory to examine its impact among UK Higher Education Institution employees. To test propositions outlined in the framework, three separate studies were conducted. In the first study, the relationship between cyberbullying and negative outcomes was examined using simple behaviour-outcome analysis to determine its potential for dysempowerment. In the second study, the relative severity of cyberbullying was explored as the framework predicts that severe events will lead to greater dysempowerment, while the study also introduced affect as a mediator between cyberbullying and outcomes in the dysempowerment process. Finally, a third study was conducted to test the full dysempowerment model in which justice and affect acted as sequential mediators in the relationship between cyberbullying and outcomes.

### **Study 1**

Study 1 was devised to test the initial premise that exposure to cyberbullying would result in negative individual and organisational-level outcomes. From a dysempowerment perspective, the higher the frequency of experience, the stronger the dysempowerment process (Kane & Montgomery 1998). Cyberbullying involves repeated exposure to negative acts, plus due to its pervasive nature and its ability to stay with the target and intrude into other life domains outside of work, it has the potential to increase the volume of the negative events experienced by an individual. Cyberbullying may be perceived as higher volume than traditional bullying because of its boundaryless nature (Heatherington & Coyne, 2014). For instance, D’Cruz and Noronha (2013) identified a cyberbullying target who stated: “The (e)mail was sent to everyone in the organization, all the bosses and team leaders. People must have showed it around to others and everyone was talking about it” (p. 335). The email highlighted the target as a being the perpetrator of a workplace injustice and whilst it was a single act, the message was circulated to others and discussed between colleagues which resulted in repeated exposure. Linked to a transactional stress model (Lazarus & Folkman 1987) this arguably creates more of a harm appraisal in terms of perceived damage to self-esteem (e.g. other people being able to view a nasty message posted on a web site) and/or a threat appraisal in terms of the fear of future cyberbullying or damage (e.g. other people beyond the initial perpetrator adding to the message or posting it more widely).

Additionally, some authors have argued cyberbullying may have more severe outcomes than traditional bullying (Campbell, 2005; Dooley, Pyzalski, & Cross, 2009). The ability of cyberbullying to invade the relatively safe home environment and the relative permanence of some forms of cyberbullying (e.g. pictures uploaded to the internet), as well as feelings of powerlessness associated with not knowing who the perpetrator is, may increase the perception of volume, accentuate the negative impacts and have more damaging and long lasting effects than

offline bullying. Furthermore, the remote nature of cyberbullying means the perpetrator is potentially less aware of the target's reaction which may lead to a reduction in empathy (Slonje & Smith, 2008) or an increase in the aggressive nature of the acts (Suler, 2004). Indeed, reduced social cues or misinterpretation of emotion have been mooted to explain low empathy in (Ang & Goh, 2010) and negative evaluations of online communication (Byron, 2008).

Therefore, cyberbullying may foster a strong dysempowerment effect because of its potential to be high volume. Additionally, the impact of cyberbullying may be more pronounced than offline bullying because it disrupts a larger part of an individual's life.

*Hypothesis 1a. Exposure to cyberbullying acts will have a positive relationship with employee mental strain and negative relationship with job satisfaction*

*Hypothesis 1b. The relationship between exposure to cyberbullying acts and negative outcomes will be stronger than between offline bullying and negative outcomes*

## **Method**

### ***Participants.***

An online questionnaire was distributed to 500 employees of one UK University, from which there were 120 respondents (response rate of 24%). The questionnaire link was also advertised on a second university intranet system of which a total of 24 respondents replied (a response rate could not be determined for this sample). Of the total 144 respondents, 12 were excluded from the analysis on the basis of missing data, yielding a final sample for analysis of 132. The sample comprised 75% females, with a mean age of 42.4 years (SD = 10.5) and mean job tenure of 9.4 years (SD = 6.6). Job roles included administrative (40.9%); academic, teaching, and research roles (39.8%); management (13.6%); and technical (5.7%).

### ***Materials and procedure.***

Offline bullying experience was measured using the revised Negative Acts Questionnaire (NAQ-R) (Einarsen, Hoel & Notelaers, 2009), comprising 22 items which refer to work-related, person-related or physically intimidating bullying. For each item the respondents were asked how often (*never, now or then, monthly, weekly, daily*) they had been exposed to the behaviour during the last six months. As per Einarsen, et al., we collapsed the weekly and daily ratings together and ran an initial item check on the 22 item version. One item exhibited a very low corrected-item total correlation and was omitted from the scale. A principal components analysis (PCA) with oblimin rotation was conducted, initially producing a 5-factor solution. Examination of the scree plot and in relation to the Einarsen et al research, a 3 factor solution seemed to be the most parsimonious. The PCA was re-specified, with loadings omitted less than 0.4 (as a result a further item was removed), resulting in a 3-factor solution accounting for 57.6% of the variance. The (KMO) Kaiser-Meyer-Olkin measure (0.85) and Bartlett's test of sphericity [ $\chi^2(210) = 1655.9$ ,  $p < 0.001$ ] illustrated the sample size and correlations were sufficiently large for factor analysis. Factor 1 (10 items) mapped the notion of work-related bullying; factor 2 (6 items) comprised person-related bullying; and factor 3 (4 items) physically intimidating bullying.

As no current measurement of workplace cyberbullying acts existed, we used an adapted version of the NAQ-R to measure repeated exposure to negative acts at work via technology. Criticism could be levelled using this approach in terms of the appropriateness of adapting the NAQ to online contexts. Our rationale is threefold. Firstly, related published research has used a similar approach. For example, Privitera and Campbell (2009) adapted the NAQ for workplace cyberbullying and more recently Giumetti et al. (2012) added 'online' to each item of the Workplace Incivility Scale to create a cyber-incivility version. Secondly as we have conceptualized cyberbullying as repeated, enduring negative workplace behaviour that occurs via technology and as the NAQ-R is often used as a measure of repeated exposure to bullying (e.g.

Hogh, Hansen, Mikkelsen & Persson, 2012), we argue that a modified version for cyber contexts would assess workplace bullying acts experienced via a range of technology, thus ensuring that the measurement instrument is consistent with our conceptualisation. Thirdly, existing online workplace behaviour studies are either too narrow in scope, focusing only on one medium such as email (e.g. Baruch, 2005; Ford, 2013), ask one general question of ‘online abuse’ (e.g. Phippen, 2011), or assesses constructs such as cyberaggression (Weatherbee & Kelloway, 2006) and cyber-incivility (Lim & Teo, 2009) which are different to cyberbullying.

To ascertain a level of content validity, NAQ-R items were rated by three subject-matter experts regarding the extent to which they agreed that each act could be enacted over various electronic media: *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*. The first seven electronic media were included as they were identified by Smith et al. (2008) as the most common media for perpetrators to engage in cyberbullying behaviours, while social networking websites were included due to the rapid rise in their use in recent years. The response categories were: *1 = strongly disagree, 2 = disagree, 3 = unsure, 4 = agree, 5 = strongly agree*. Screening on the basis of agreement that behaviours could be enacted over electronic media, resulted in three items being removed (withholding of information; intimidating behaviour, and excessive teasing). Using the same rating scale as the NAQ-R, participants were asked to rate their exposure to each of the 19 acts at work via the electronic media identified over the last six months.

Three items had poor corrected-item total correlations and were omitted from the final scale. Once again, PCA using oblimin rotation was run on the 16-item CNAQ scale. Initially a 3-factor solution emerged, but looking at the scree plot a 2-factor model seemed to best represent the data. The PCA was re-specified as a 2-factor model, which accounted for 56.1% of the

variance. The KMO value of 0.83 and Bartlett's test [ $\chi^2$  (120), 1244.13,  $p < 0.001$ ], supported the use of factor analysis. Factor 1 (10 items) comprised work-related bullying items and factor 2 (6 items) comprised person-related bullying items.

General mental strain was measured using the 12 item General Health Questionnaire (GHQ-12) by Goldberg and Williams (2006). Each item assesses symptoms of general mental strain over the past few weeks (higher scores indicating more strain) including response categories of: *better than usual*, *same as usual*, *less than usual*, *much less than usual*. A four point Likert scale scoring (0-3) was chosen and an alpha coefficient of 0.81 was obtained.

Given practical considerations of survey length, a single-item job satisfaction measure based on Scarpello and Campbell (1983) was used: "Overall, how satisfied are you with your job?" Participants were presented with five response categories (scored 1-5): *very dissatisfied*, *dissatisfied*, *neutral*, *satisfied*, *very satisfied*. Scarpello and Campbell (1983) and Nagy (2002) have all shown that single item job satisfaction measures compare favourably to scale-based measures.

## **Results**

A total of 110 respondents (83.3%) reported exposure to at least one negative act measured by both the CNAQ and the NAQ-R during the previous six months. Leymann's (1996) operational definition of experiencing one negative behaviour on at least a weekly basis in the last 6 months was used to classify cyberbullying targets. Using this criterion, 18 (13.6%) respondents could be classified as cyberbullying targets, whilst 26 respondents (19.7%) faced at least one offline bullying act on at least a weekly basis. Fourteen of these 18 cyber-targets were also targets of offline bullying. The term 'targets' was used instead of 'victims' as without a self-report item to assess whether a perceived power disparity exists between perpetrator and victim, respondents status as victims remains unknown (Nielsen, 2014). The CNAQ items most

frequently experienced were having your views or opinions ignored (52% of the sample), being exposed to an unmanageable workload (48%), being given tasks with unreasonable or impossible targets or deadlines (41%) and being ignored or excluded (40%).

Significant correlations emerged between negative cyber-acts and general mental strain, and job satisfaction. A similar pattern of correlations emerged between these variables and offline bullying, although the correlations tended to be smaller and in some cases non-significant (Table 1). Strong relationships emerged between work-related offline and online factors (0.82) and between personal online and offline factors (0.73) - the median correlation of NAQ-R/CNAQ factors being 0.48. However, correlations between work and personal CNAQ factors (0.60) were larger than the median correlation (0.46) across online/offline contexts (e.g. CNAQw with NAQp) and through content validation and item analysis it is evident that physically-intimidating bullying is not represented in the CNAQ. This data supports our previous contention that cyberbullying is conceptually similar to offline bullying, yet suggests the CNAQ is also measuring something different to the NAQ-R.

[Insert Table 1 about here]

To test Hypothesis 1a, hierarchical regression analyses were conducted for both general mental strain and job satisfaction. In the first step demographic variables of age, gender, tenure and university were controlled; in the next step total cyberbullying and offline bullying exposure were entered. VIF values and Tolerance values were within accepted limits. Checks for normality using residual plots suggested no problems.

[Insert Table 2 about here]

For both outcome variables, demographic variables accounted for little of the observed variance. The inclusion of CNAQ and NAQ-R in the regression accounted for significant incremental variance: 23% of the variance in general mental strain and 12% in job satisfaction.

Supporting Hypothesis 1a, the full model indicated a significant positive relationship between cyberbullying and general mental strain and a negative relationship with job satisfaction (confidence intervals not crossing zero). Regression coefficients were not significant for offline bullying in both models, with confidence intervals including zero. Initially, this provides some evidence for Hypothesis 1b in that there is a stronger effect of CNAQ on outcomes than for NAQ-R. However, similar to Van Dyne, Jehn and Cummings (2002), we used Steiger's z-test (1980) to compare the difference in correlations between CNAQ and outcomes with NAQ-R and outcomes. Results indicated no significant difference ( $z = 1.19$ ) in the strength of the relationship between CNAQ and mental strain ( $r = 0.47$ ) compared to NAQ-R and mental strain ( $r = 0.41$ ). The CNAQ-job satisfaction relationship ( $-0.33$ ) was significantly stronger ( $z = -2.02$ ) than the NAQ-R-job satisfaction relationship ( $r = -0.22$ ). Hypothesis 1b is therefore partially supported.

## Study 2

Building on the findings from study 1, study 2 assessed an independent sample to specifically test the notion of severity of experience and affect within the dysempowerment model. Additionally we included control variables not seen in study 1. As research has suggested a relationship between technology use and cyberbullying (Erdur-Baker, 2009; Rivers & Noret, 2010; Ybarra & Mitchell, 2004) we controlled for computer use at work and computer use at home. Further, similar to Lim et al. (2008), we controlled for general job stress, as we were interested in understanding the effects of cyberbullying beyond general pressures at work.

Variation occurs in how severe individuals perceive different bullying behaviours (Escartin, Rodríguez-Carballeira, Zapf, Porrúa, & Martin-Pena, 2009) and acts perceived as more severe are more damaging (Sticca & Perren, 2013). Indeed, stress research (e.g. Motowidlo, Packard & Manning, 1986) and offline workplace bullying research specifically (Lutgen-Sandvik, Tracy & Alberts, 2007) support the effect of intensity on negative outcomes. Unlike

workplace bullying research, investigation of cyberbullying is still in the early phases, however some initial evidence has emerged that students do not perceive cyberbullying acts as being equally severe (Menesini, Nocentini & Calussi, 2011; Slonje & Smith, 2008). This would suggest that variation may occur in the perceived severity of cyberbullying acts experienced in the working context. If certain cyberbullying behaviours are perceived as more severe than others, these behaviours will more likely lead to a dysempowerment effect. Therefore, we hypothesize that:

*Hypothesis 2. Perceived intensity of workplace cyberbullying acts will relate positively to mental strain and negatively to job satisfaction.*

Kane and Montgomery (1998) additionally posit that the primary outcome of dysempowerment is a negative affect response which then translates to subsequent disruptions to the employee's attitudes and behaviour. Often, negative affectivity (NA) is used to capture subjective emotional experiences arising from stress. Being a victim of intentional harm seems to threaten people's general positive assumptions of themselves, others, and the surrounding environment (Janoff-Bulman, 1989), thus elevating their state of NA. Research in offline bullying has supported the mediating effect of NA on the relationship between exposure to workplace bullying behaviours and health outcomes (Djurkovic, McCormack & Casimir, 2004; Mikkelsen & Einarsen 2002). Further, Byron (2008) proposes that individuals high in NA are more likely to perceive the negative elements in email communication than those low in NA. However, neither Lim et al. (2008) nor Lim and Teo (2009) included the mediating effect of negative affect in their dysempowerment-framed research and as far as we are aware no empirical research has been conducted on exposure to workplace cyberbullying and NA. Hypothesis 3 is therefore:

*Hypothesis 3. State-NA will mediate the relationship between experiencing workplace cyberbullying acts and mental strain and job satisfaction.*

## **Method**

### ***Participants***

Data was collected online in three different UK Universities. An email with the survey link was sent to the administrative staff of different departments, who were asked to forward the email to their work colleagues. Of the initial 132 respondents, 44 (33%) were excluded from the analysis on the basis of having only partially completed the survey, yielding a final sample of 88 (53 female and 35 male), with a mean age of 35.6 years of age (SD = 10.3). As most responses (75%) were from one university, we collapsed the other two university samples into one group. Due to an error in uploading the questionnaire, data was not collected on tenure.

### ***Materials and procedure***

The procedure for study 2 was the same as in study 1 with the omission of NAQ-R. We included the same scales of cyberbullying (CNAQ, alpha = .88), mental strain (GHQ-12, alpha = .89) and job satisfaction. Given the small sample size, we did not assess factor structure of the CNAQ scale here, but have included this data in the analysis of structure in Study 3.

An adapted version of CNAQ was included to measure the severity of cyberbullying behaviour. This comprised the same 16 items as in the CNAQ, but participants were asked “how stressful” they felt each item was or would be for them. Participants responded on a five-point Likert scale of *not at all stressful, slightly stressful, moderately stressful, very stressful, and extremely stressful*. Alpha level recorded was 0.95.

State-NA was measured by the 10-item NA scale of the PANAS scales (Watson, Clark & Tellegen 1988). Respondents were asked to indicate to what extent they had experienced a particular feeling or emotion within 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 level of 0.89 was obtained.

Computer use at work (e.g. ‘how often in a week do you spend time on computer at work?’) and computer use at home (e.g. ‘how often in a week do you spend time on computer at home?’) were included as control variables. The response categories for both were: *very little, little, a moderate amount, often, very often*. To control general job stress we used the seven-item ‘Pressure’ subscale of the ‘Stress in General’ scale (Stanton, Balzer, Smith, Parra & Ironson, 2001). Participants were asked to respond to a number of adjectives (e.g. “demanding”, “pressured”, “calm”) describing their job in general. The response scales were ‘*yes, no, unsure*’. An alpha level of .85 was obtained.

## **Results**

A total of 77 individuals (87.5%) were exposed to at least one negative cyber act during the previous six months and 16 (20.8%) participants could be classified as targets of cyberbullying using Leymann’s definition. The CNAQ items most frequently experienced were being given tasks with unreasonable or impossible targets or deadlines (59%), having your views or opinions ignored (58%), being exposed to an unmanageable workload (58%) and being ordered to do work through electronic means below your level of competence (47%). Correlations indicate significant relationships between cyberbullying and NA and job satisfaction, as well as between mental strain and work-related and total cyberbullying exposure.

Insert Table 3 about here

Hierarchical regression analyses were conducted controlling for computer use at work and home, job-related pressure, age, gender and university in the first step (Table 4). In all cases VIF values and Tolerance values were within accepted limits and checks for normality using residual plots suggested no problems. While data indicated the frequency of cyberbullying exposure

related negatively to job satisfaction (further, partial support for Hypothesis 1), perceptions of cyberbullying intensity did not significantly relate to either job satisfaction or mental strain.

Therefore, Hypothesis 2 was not supported.

To examine mediation effects of state-NA, we used bootstrapping via the PROCESS tool (Hayes, 2013). Bootstrapping has higher power and control over Type 1 errors (Preacher & Hayes, 2008) and does not impose assumptions of normality (Hayes, 2009). We employed the bootstrapping method with bias-corrected and accelerated estimates based on 10000 re-samples and 95% confidence intervals. Estimates of indirect effects are considered significant when zero is not contained in the 95% confidence intervals. Mediation analysis using bootstrapping supported Hypothesis 3, showing significant indirect effects of state-NA between exposure to cyberbullying and general mental strain (point estimate = .249 [95% CI = .104, .492]) and job satisfaction (point estimate = -.012 [95% CI = -.033, -.001]).

### **Study 3**

Preceding an emotional reaction, Kane and Montgomery argue that an individual cognitively interprets the event as a violation of dignity in terms of perceptions of unfairness. This suggests a sequential cognition-emotion process in which a negative work event is perceived as unfair which then leads to an emotional reaction. Indeed, within the fairness literature, the notion of unfairness relating to negative emotions has been widely evidenced (see Cropanzano, Stein & Nadisic, 2011). The previous two studies did not test the full dysempowerment model using a serial multiple mediation design of cyberbullying to justice to state-NA to outcome. Study 3 was designed to address this limitation as well as to assess the impact of witnessing cyberbullying.

Injustice perceptions have been mooted to play a role in individual reactions to offline workplace bullying (Bowling & Beehr, 2006; Neuman & Baron, 2003). Parzefall and Salin

(2010) theorized that interactional injustice perceptions act as a mediator between bullying and employee attitudes and behaviour, because exposure to bullying may abolish an employee's perceptions of a just world. Indeed, justice has been identified as a mediator of the relationship between co-worker undermining behaviour and job satisfaction (Duffy, Ganster, Shaw, Johnson & Pagon, 2006); abusive supervision and depression, anxiety, job satisfaction, organisational commitment and emotional exhaustion (Tepper, 2000); and workplace discrimination and both well-being and job satisfaction (Wood, Braeken & Niven, 2013).

Conceptually, justice has been classified into distributive justice (fairness of outcome) procedural justice (fairness of procedures) and interactional justice. This latter dimension focuses on the quality of interpersonal treatment an individual receives (Bies & Moag, 1986) and has been further refined to include a sub-dimension of interpersonal justice capturing perceptions of being treated with dignity and respect (Colquitt et al., 2001). Therefore, as a violation of dignity is central within the dysempowerment framework, interpersonal justice appears to be the most appropriate construct to capture this cognition. Therefore, to fully test the dysempowerment model within a cyberbullying context we propose a hypothesis of:

*Hypothesis 4: The relationship between experiencing cyberbullying acts and negative outcomes is mediated sequentially through interpersonal justice and negative affect.*

Observing others facing cyberbullying acts may also result in dysempowerment - specifically when the witness identifies socially with the victim (Kane & Montgomery 1998). Li, Smith and Cross (2012) argue the bystander role in cyberbullying is more complex than offline bullying, as the bystander can be with the target of the cyberbullying, the perpetrator or neither and views the cyberbullying indirectly (e.g. through receiving the negative email or visiting the social networking site). Witnesses of workplace violence are viewed as secondary victims or co-victims (Glomb et al., 1997) and therefore we would expect these individuals to also experience

negative outcomes. Empirical evidence has indicated that witnessing traditional workplace bullying is associated with individual negative outcomes (Hoel, Cooper & Faragher, 2004; Lutgen-Sandvik et al., 2007; Vartia, 2001), although these effects are not as strong when compared to targets of bullying. Empathy may play a role because when a person witnesses bullying they imagine how the victim is feeling and consequently experiences some of the bullying impact (Porath & Erez 2009). In online environments, it may be harder for witnesses to empathise with victims as reduced communication cues in this domain may prevent awareness of victim reactions. Nonetheless, research from the youth context has demonstrated that empathy is an important factor in bystander interventions to cyberbullying (Van Cleemput, Vandebosch & Pabian, 2014). Therefore while the impact of witnessing cyberbullying may be weaker than experiencing traditional bullying, we would still expect a significant effect as witnesses could still feel some of the impact.

*Hypothesis 5: Witnessing workplace cyberbullying acts will have a positive relationship with mental strain and negative with job satisfaction.*

## **Method**

### *Participants*

Data was also collected via an online questionnaire in six UK universities. An email which included a link to an online questionnaire was initially distributed in one university, via a staff volunteer list. However in the interests of improving sample size, the email was then forwarded to staff at five additional universities by administrative staff in different academic departments. Similar to study 2, as most responses (73%) were from one university, we collapsed the other university samples into one group for analysis. Of the final 111 in the sample, 73% were females and the sample had a mean age of 39.4 years ( $SD = 10.7$ ) and mean job tenure of 6.9 years ( $SD = 7.2$ ). Most (63.2%) were in academic, teaching, and research roles.

### *Materials and procedure*

We included the same scales of cyberbullying (CNAQ,  $\alpha = .84$ ), mental strain (GHQ-12,  $\alpha = .89$ ), negative affectivity (PANAS,  $\alpha = .89$ ), job satisfaction and, similar to study 2, the same control variables of computer use and job-related pressure.

Samples from studies 2 and 3 were combined ( $N=199$ ) to confirm the two-factor structure of work and person related cyberbullying seen in study 1. Within each factor, using a process outlined by Marcus, Schuler, Quell and Humpfner (2002), item parcels (three for each latent factor) were created as manifest variables for the analysis. Such an approach helps to overcome problems of small to moderate sample sizes and non-normality at the item-level data (Hau & Marsh, 2004). Robust statistics analysis indicated good fit for the two-factor structure (CFA = .94, SRMR = .042, RMSEA = .08, 95% CI [.03, .13]), which was better than a one-factor model (CFA = .88, SRMR = .05, RMSEA = .10, 95% CI [.06, .15]).

The CNAQ scale was adapted to examine how often the respondents had *witnessed* their colleagues being subjected to acts of cyberbullying. The respondents rated the 16 items from *1=never* to *5=daily*. An alpha coefficient of 0.91 was obtained.

Interpersonal justice was assessed using three items adapted from Bies and Moag's (1986) scale which measured the extent to which participants believed they were treated with dignity and respect at work (e.g. "At work I am treated with dignity"). Response categories were: *very slightly or not at all, a little, moderately, quite a bit, extremely*. An alpha coefficient of 0.94 was obtained.

### **Results**

A total of 88 individuals (79.3%) were exposed to at least one negative act during the previous six months and 20 (18.0%) participants could be classified as targets of cyberbullying using Leymann's definition. The CNAQ items most frequently experienced were having your

views or opinions ignored (54% of the sample), being exposed to an unmanageable workload (42%), being ignored or excluded (41%) and being given tasks with unreasonable or impossible targets or deadlines (40%). Significant correlations between cyberbullying and general mental strain, NA, interpersonal justice and job satisfaction emerged (Table 5).

Insert Table 5 about here

Hierarchical regression analysis provided further support for Hypothesis 1a as cyberbullying positively predicted general mental strain and negatively predicted job satisfaction. The inclusion of cyberbullying in the regression accounted for significant incremental variance after controlling for demographic variables, PC use and job-related pressure: 7% of the variance in mental strain and 12% in job satisfaction.

A serial multiple mediator model using bootstrapping mediation (correcting for job-related pressure) was analysed to test the indirect effects of CNAQ on outcomes via a pathway of justice to NA to outcomes. Contrary to Hypothesis 4, for mental strain and job satisfaction, non-significant serial multiple mediation models are found (Table 6). However, the analysis does show significant indirect effects for state-NA between cyberbullying and mental strain (point estimate = .132 [.025, .314]) and cyberbullying and job satisfaction (point estimate = -.012 [-.036, -.02]), as well as an indirect effect for justice between cyberbullying and job satisfaction (point estimate = -.033 [-.065, -.016]).

#### *Common method variance*

To assess the possibility that common method variance (CMV) was present in the data, we examined data on those scales (CNAQ, GHQ-12 and PANAS) consistent across studies two and three (N=199). Firstly, Harman's single factor test illustrated a one-factor solution accounted for only 25.6% of the variance. Secondly, using a latent variable approach, we conducted a confirmatory factor analysis where items loaded on their respective latent construct as well as a

latent CMV factor (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). This was then compared to a model without the latent CMV factor. In the latent CMV factor model, all unstandardized parameter estimates are significant and a comparison of the standardised estimates between models illustrated that out of the 38 comparisons, only 5 showed a difference above 0.2 (4 of these were PANAS items). Therefore, for these variables at least, CMV does not appear to unduly impact on parameter estimates.

Insert Table 6 about here

A total of 77 (69%) respondents had witnessed at least one cyberbullying act in the previous six months. Contrary to Hypothesis 5, hierarchical regression analyses indicated witnessing cyberbullying did not exhibit significant relationships with outcome measures after controlling for demographics and job-related pressure (Table 7). Bootstrapping mediation analysis with witnessing bullying as the predictor, illustrated a non-significant serial multiple mediation model in addition to non-significant indirect effects of NA and justice (Table 6). Therefore, witnessing cyberbullying acts appears not to exhibit a dysempowering effect.

Insert Table 7 about here

## **Discussion**

This research has a number of advantages over the previous, limited research on workplace cyberbullying. Firstly, we extend the research beyond prevalence rates to examining outcomes of experiencing and witnessing workplace cyberbullying and the mediation effect of fairness perceptions and emotion via a dysempowerment theoretical perspective. Secondly, we studied a sample which would be expected to have access to and use technology regularly in their work (a limitation of the Privitera & Campbell 2009 study). Thirdly, the previous workplace cyberbullying literature has tended to limit its conceptualization to email/phone communication

or cyber-incivility and we widened the concept of cyberbullying to include social networking sites and virtual communities.

Results across the three studies indicated 80-88% of participants experienced at least one form of cyber negative act in the previous six months and between 14-21% of participants could be classified as cyber-targets. In line with dysempowerment theory, significant relationships between experiencing negative cyber-acts and outcomes emerged. These accord with the research in adolescent cyberbullying (e.g. Junoven & Gross, 2008) and offline bullying contexts (Coyne, 2011). The stronger relationship seen for cyberbullying over offline bullying (particularly for job satisfaction) partially supports the notion that cyberbullying may have more severe outcomes than offline bullying (Campbell, 2005; Dooley et al., 2009). Contrary to dysempowerment theory, no support for perceptions of intensity nor a serial multiple mediation model of cyberbullying to justice to NA to outcome was found. However, analysis supported an indirect effect between cyberbullying and outcomes via NA and between cyberbullying and job satisfaction via interpersonal justice. This corresponds with research on NA (Mikkelsen & Einarsen, 2002) and justice in traditional bullying (Bowling & Beehr, 2006; Parzefall & Salin, 2010). Further, and counter to the extant research on traditional workplace bullying (Hoel et al., 2004, Vartia, 2001) witnessing cyberbullying did not relate to negative outcomes.

As expressed, dysempowerment theory may be an appropriate framework to research cyberbullying because high volume events result in a stronger dysempowerment process (Kane and Montgomery, 1998). Traditional bullying is commonly defined in relation to frequency and duration, yet cyberbullying, due to its pervasive nature, and its ability to stay with the victim and intrude into other life domains outside of work, has the potential to increase the volume of the polluting events experienced by an individual. Cyberbullying acts can be 'repeated' by a wider pool of people than offline bullying acts (for example, a negative message/photo about an

individual on a web site or social networking site has the capability to reach a wide audience if others re-post the message/photo). Therefore, while specific acts may be similar in frequency to offline acts, the speed and the reach of cyberbullying could create a perception of increased volume and therefore increased dysempowerment. Linked to this, the experience of cyberbullying has the potential to permeate a larger part of an individual's life resulting in an inability to psychologically detach from the event. Moreno-Jiménez, Rodríguez-Muñoz, Pastor, Sanz-Vergel & Garrosa, (2009) argue detachment allows an individual experiencing a workplace stressor to switch off "...or in other words allow one to 'charge the batteries'" (p.362). However, at low levels of psychological detachment they found a positive relationship between offline workplace bullying experience and mental strain. Cyberbullying may not allow an individual to psychologically detach from the negative event and hence targets may not have the opportunity to 'charge the batteries'. This could foster perceptions of the volume of cyberbullying acts and violations of dignity resulting in a stronger dysempowerment process – being bullied at work is bad enough, but having to continually face the event day-in day-out, at home and at work is not fair and does not allow the target time to detach psychologically.

However, Kane and Montgomery's predicted sequence of events is not supported, as a serial mediation model of cyberbullying to interpersonal justice to negative affect and then outcomes was not significant. Instead, advancing the theory, it appears that interpersonal justice and negative affect are two separate routes through which cyberbullying can have its effect, with justice only mediating the cyberbullying-job satisfaction relationship. One explanation for this lies in the notion of blame attribution and the extent to which an event is dysempowering may depend on how blame for that event is attributed. Bowling and Beehr's (2006) attributional model of workplace harassment proposes when individuals blame themselves for being harassed they experience greater negative affect, which in turn causes reduced well-being. 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 (Smith & Ellsworth, 1987) and guilt (Brown & Weiner, 1984), 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. 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 (Hershcovis & Barling, 2010). However negative work attitudes, such as job dissatisfaction, may arise in response to unfair treatment (Tepper, 2000). Therefore, blaming the self and blaming the perpetrator may act as separate routes to a dysempowerment process with the former via negative affect and the latter via injustice perceptions. Recently, in a sample of trainee doctors, Farley et al (2015) found negative emotion mediated the relationship between self-blame for cyberbullying and mental strain; whereas interactional justice mediated the association between blaming the perpetrator and job satisfaction. Although the notion of attribution, justice and emotion as mediators of workplace aggression more generally has been promoted (Hershcovis, 2011), the actual paths between the three are not yet fully understood within a cyberbullying context. Further research should expand dysempowerment theory to include attributions of blame.

Our data suggests the cyber-context creates a reduced dysempowering process for those individuals who witnessed cyberbullying acts. This does not necessarily run counter to the dysempowerment model, as it hypothesizes that the effect would be stronger if the witness socially identifies with the victim. However, in cyber-contexts it has been argued that empathy is reduced resulting in "...less opportunity for bystander intervention" (Slonje & Smith 2008,

p.148). Online communication lacks the personal dimension and can result in individuals focusing less attention on each other and more on the communication itself (Kiesler, 1986). Resultantly, a deindividuation effect occurs, making people less sensitive to the thoughts and feelings of others (Siegel, Dubrovsky, Kiesler & McGuire 1986). The process of deindividuation may not only result in disinhibited behaviour on the part of the perpetrator, but may also cause a witness to exhibit less attention, empathic understanding and social identification towards the actual target. Indeed, the non-significant indirect effects between witnessing cyber negative acts justice, negative affectivity and outcomes suggest that witnesses do not necessarily put themselves psychologically in the position of the target. This could be because the delay in feedback in computer-mediated communication makes it difficult for an individual to determine the emotional state of the receiver (Byron, 2008). A witness does not then develop a strong emotional empathy or injustice perception with the target. Furthermore, as reduced social cues in the cyber-context "...facilitate both low affective and low cognitive empathy in individuals" (Ang & Goh 2010, p.389), this reduced sharing of emotions and understanding of emotions with others may mean that witnesses do not experience as strong an emotional reaction as they would witnessing offline bullying. Therefore, we argue the online nature to cyberbullying may reduce the likelihood of a witness experiencing social bonds with the victim, potentially reducing their empathic responding. As a result, less dysempowerment emerges and consequently the witness may not experience negative effects.

### ***Practical considerations***

In terms of the implications for HR, there is a need to understand and consider the impact of workplace cyberbullying in greater detail. If school cyberbullying is a model, then this form of bullying is likely to increase at work and understanding how to deal with a problem which goes beyond the boundaries of the work environment is paramount. This research suggests,

cyberbullying has implications for employee well-being and organizational performance, potentially more so than for offline bullying. HR policies and procedures for offline bullying need to be considered for their effectiveness in reducing cyberbullying and may need to be extended to cover cyberbullying both inside and outside of working contexts. The development of HR policies providing guidance on acceptable behaviours for employees engaging in online communication seems to be critical to both preventing and addressing incidences of cyberbullying. Such policies should specify clearly that all employees should be treated with dignity and respect and hence reduce injustice cognitions central within dysempowerment theory. However, trust between HR practitioners and employees is crucial to a successful bullying policy (Harrington, Rayner & Warren, 2012) and without trust, unfairness cognitions could persist. Additionally, Woodrow and Guest (2014) argue that a lack of manager skills, motivation or time and mixed messages regarding policy implementation inhibit the implementation of a bullying policy. Any bullying policy is likely not to succeed if it isn't endorsed at senior levels.

Additionally, for cyberbullying outside of working contexts, clear differentiation between excessive monitoring and controlling employee online communication needs to be agreed (Broughton, Higgins, Hicks, & Cox, 2010). Systems also need to be set in place for supporting targets of such abuse (e.g. helpline or email contact that could be used outside of working hours). Further, if as we hypothesise that online communication may promote witnesses of cyberbullying acts to less likely social identify with a target (and therefore show reduced empathy and dysempowerment), provision for witnesses to be able to report behaviours and to support a target should be included in order to enhance attention, empathy and social identification. In this respect gatekeepers of work-related online communities should consider asking member to use their real name and a photo of themselves when posting comments. This method could reduce some of the anonymity associated with online communication and it would allow bystanders to report and

intervene against perpetrators of abusive cyber communications. Ideas such as cyber mentoring could also be adopted as an informal approach to supporting cyber-targets, as well as potentially enhancing the social identification co-workers have with targets.

### ***Limitations***

The use of an adapted NAQ-R scale applied to cyber contexts as a method to assess cyberbullying could be criticised. However, we have argued that as existing research has used this approach and current workplace measures are too narrow in scope or assess different concepts, the method we adopted was appropriate for an emerging research area. Additionally evidence of the content validity and construct validity of a two-factor model representing work and person-related negative acts is also provided. Workplace cyberbullying was conceptualised as ‘repeated and enduring negative behaviour in the workplace that occurs via technology’. The elements stressed in this definition are reflected in the measurement instrument as the CNAQ measures exposure to bullying behaviours enacted by technology. However the CNAQ only measures frequency and exposure to different negative cyberbullying acts and does not assess power disparity between perpetrator and target. Should this be a defining feature of workplace cyberbullying (as it is offline bullying) research needs to also use an appropriate self-report question to assess self-labelled victimisation (Nielsen, Matthiesen & Einarsen, 2010). Future research will need to examine if workplace cyberbullying is simply ‘bullying via electronic means’ and whether there are unique behaviours of cyberbullying at work.

A second limitation is the self-report nature to the research. Monomethod approaches are commonplace in bullying research as other reports may only identify those behaviours that are overt in their nature and hence covert bullying may be underestimated (Coyne, Smith-Lee Chong, Seigne & Randall, 2003). Further, the nature of the other variables in the current research lends it to self-report data collection, because as Spector (2006) noted, “ it is difficult to get accurate

information about internal states, such as attitudes or emotions, with anything other than self-reports” (p.229). Yet, monomethod approaches are subject to common method variance (CMV). However, the Harman’s single factor test and latent variable statistical analyses coupled with results showing relationships with outcome measures after controlling for general stress (which was also measured via self-report) suggest our findings are not impacted greatly by CMV.

Thirdly, the cross-sectional nature to the research does not allow us to test causal processes or the possibility of reciprocal and/or reverse causation. In mitigation, the directional hypotheses supported here were based on specific theoretical predictions and hence unlikely due to chance. Further, within traditional workplace bullying contexts, Rodriguez-Munoz, Baillien, De Witte, Moreno-Jimenez and Pastor (2009) have shown using two-wave designs that bullying is a cause rather than a consequence of well-being. While there is clearly a need for more longitudinal cyberbullying research, recent evidence of workplace bullying would indicate an expected causal route of cyberbullying to mental strain and not the opposite.

Finally, all studies involved relatively small samples. This may have been a function of the methodology as online surveys tend to have high dropout rates because participants withdraw at any time without informing the researcher (Andrews, Nonnecke, & Preece, 2003). The method also allows the surveyed population to self-select their participation, as such it is possible that those who responded were interested because they had experienced or witnessed cyberbullying. Whilst this is a limitation of the research, the methodology was particularly applicable to this research as the focus was an online phenomenon. However future research should seek to obtain higher participation rates to promote greater confidence in the results.

### ***Conclusion***

Framed within a theoretical model, the present study contributes to the embryonic research on workplace cyberbullying. Overall, our findings provide some support for a

dysempowerment theory explanation for how cyberbullying impacts on general mental strain and job satisfaction, although rather than a sequential multiple mediation route, it appears different dysempowerment processes emerge via unfairness perceptions and negative affect. Results demonstrate that cyberbullying is a serious workplace problem in terms of individual and organizational impact, and suggest that electronic media provides another channel for perpetrators to engage in negative acts in the workplace. Interestingly, the unique nature to the cyber-context may create an increased dysempowering impact for the individual target, but a reduced dysempowering effect for the witness.

### References

- ACAS. (2012), 'Does it matter that phones and emails are taking over from old-fashioned face time?' Retrieved from <http://www.acas.org.uk/index.aspx?articleid=3995>
- Andrews, D., Nonnecke, B., & Preece, J. (2003), 'Electronic survey methodology: A case study in reaching hard-to-involve Internet users.' *International Journal of Human-Computer Interaction*, 16, 185–210.
- Ang, R.P., and Goh, D.H. (2010), 'Cyberbullying among adolescents: the role of affective and cognitive empathy, and gender', *Child Psychiatry and Human Development*, 41, 387-397.
- Association of Teachers and Lecturers, ATL (2009). '15 per cent of teachers have experienced cyberbullying.' Retrieved from <http://www.atl.org.uk/Images/Joint%20ATL%20TSN%20cyberbullying%20survey%20009.pdf>
- Baruch, Y. (2005), 'Bullying on the net: adverse behaviour on e-mail and its impact', *Information & Management* 42, 361-371.
- Besley, B. (2009). 'Cyberbullying'. [www.cyberbullying.org/](http://www.cyberbullying.org/).

- Bies, R., and Moag, J. (1986), 'Interactional justice: Communication criteria of fairness', in *Research on Negotiations in Organizations*, eds. R.J. Lewicki, B.H. Sheppard, and M.H. Bazerman, Greenwich, CT: JAI Press, pp. 43-55.
- Bowling, N.A., and Beehr, T.A. (2006), 'Workplace harassment from the victim's perspective: A theoretical model and meta-analysis', *Journal of Applied Psychology*, 91, 998-1012.
- Broughton, A., Higgins, T., Hicks, B., and Cox, A. (2010). *Workplaces and social networking. The implications for employment relations*. Brighton: Institute for Employment Studies.
- Brown, J., and Weiner, B. (1984), 'Affective consequences of ability versus effort ascriptions: Controversies, resolutions, and quandaries', *Journal of Educational Psychology*, 76, 146-158.
- Byron, K. (2008), 'Carrying too heavy a load? The communication and miscommunication of emotion by email', *Academy of Management Review* 33, 309-327.
- Campbell, M.A. (2005), 'Cyber bullying: An old problem in a new guise?', *Australian Journal of Guidance and Counselling*, 15, 68-76.
- Colquitt, J.A., Conlon, D.E., Wesson, M.J., Porter, C.O.L.H., and Ng Yee, K. (2001), 'Justice at the Millennium: A Meta-Analytic Review of 25 Years of Organizational Justice Research', *Journal of Applied Psychology*, 86, 425-45.
- Coyne, I. (2011), 'Bullying in the workplace', in *Bullying in Different Contexts*, eds. C.P. Monks and I. Coyne, Cambridge: Cambridge University Press, pp. 157-184.
- Coyne, I., Craig, J., and Smith-Lee Chong, P. (2004), 'Workplace bullying in a group context', *British Journal of Guidance and Counselling*, 32, 301-317.
- Coyne, I., Smith-Lee Chong, P., Seigne, E., and Randall, P. (2003), 'Self and peer nominations of bullying: An analysis of incident rates, individual differences, and perceptions of the

- working environment', *European Journal of Work and Organizational Psychology*, 12, 209-228.
- Cropanzano, R., Stein, J., and Nadisic, T. (2011), *Social Justice and the Experience of Emotion* (1st ed.). New York, NY: Routledge.
- D'cruz, P., & Noronha, E. (2013). 'Navigating the extended reach: Target experiences of cyberbullying at work. *Information and Organization*', 23, 324-343.
- Djurkovic, N., McCormack, D., and Casimir, G. (2004), 'The physical and psychological effects of workplace bullying and their relationship to intention to leave: A test of the psychosomatic and disability hypotheses', *International Journal of Organizational Theory and Behavior*, 7, 469-497.
- Dooley, Julian, J., Pyzalski, J., and Cross, D. (2009), 'Cyberbullying versus face-to-face bullying: A theoretical and conceptual review', *Zeitschrift für Psychologie/Journal for Psychology* 217, 182-188.
- Duffy, M. K., Ganster, D. C., Shaw, J. D., Johnson, J. L., & Pagon, M. (2006), 'The social context of undermining behaviour at work', *Organizational Behavior and Human Decision Processes*, 101, 105–121.
- Einarsen, S., Hoel, H. and Notelaers, G. (2009), 'Measuring exposure to bullying and harassment at work: Validity, factor structure and psychometric properties of the Negative Acts Questionnaire-Revised', *Work & Stress* 23, 24-44.
- Erdur-Baker, O. (2009), 'Cyberbullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools', *New Media & Society* 12, 109-125.

- Escartin, J., Rodríguez-Carballeira, A., Zapf, D., Porrúa, C., and Martin-Pena, J. (2009), 'Perceived severity of various bullying behaviours at work and the relevance of exposure to bullying', *Work & Stress*, 23, 191-205.
- Farley, S., Coyne, I., Sprigg, C., Axtell, C., and Subramanian, G. (2015), 'Cyberbullying: the experience of trainee doctors', *Medical Education*, 49, 436-443.
- Ford, D.P. (2013), 'Virtual harassment: media characteristics' role in psychological health', *Journal of Managerial Psychology*, 28, 408-428.
- Giga, S. I., Hoel, H. and Lewis, D. (2008) *Dignity at Work: The Costs of Workplace Bullying. Unite and BERR Partnership Project Working Together for Dignity at Work*. London: Unite the Union/BERR
- Giumetti, G. W., McKibben, E.S., Hatfield, A. L., Schroeder, and Kowalski, R. M. (2012), 'Cyber Incivility @ work: The new age of interpersonal deviance', *Cyberpsychology, Behavior and Social Networking*, 15, 148-154.
- Glomb, T.M., Richman, W.L., Hulin, C.L., Drasgow, F., Schneider, K.T., and Fitzgerald, L.F, (1997), 'Ambient sexual harassment: An integrated model of antecedents and consequences', *Organizational Behavior and Human Decision Processes*, 71, 309-328.
- Goldberg, D. and Williams, P. (2006), *A User's Guide to the General Health Questionnaire*. London: GL Assessments.
- Harrington, S., Rayner, C., and Warren, S. (2012), 'Too hot to handle? Trust and human resource practitioners' implementation of anti-bullying policy', *Human Resource Management Journal*, 22, 392-408.
- Hau, K.-T., and Marsh, H.W. (2004), 'The use of item parcels in structural equation modeling: Non-normal data and small sample sizes', *British Journal of Mathematical Statistical Psychology*, 57, 327-351.

- Hayes, A.F. (2009), 'Beyond Baron and Kenny: Statistical mediation analysis in the new millennium', *Communication Monographs*, 76, 408-420.
- Hayes, A. F. (2013), *Introduction to mediation, moderation and conditional process analysis*. New York: The Guildford Press.
- Heatherington, W., and Coyne, I. (2014), 'Understanding individual experiences of cyberbullying encountered through work', *International Journal of Organizational Theory and Behavior*, 17, 163-192.
- Hershcovis, M. S. (2011), "'Incivility, social undermining, bullying... oh my!": A call to reconcile constructs within workplace aggression research', *Journal of Organizational Behavior*, 32, 499-519.
- Hershcovis, M. S., & Barling, J. (2010), 'Comparing victim attributions and outcomes for workplace aggression and sexual harassment', *Journal of Applied Psychology*, 95, 874-888.
- Hoel, H., Cooper, C.L., & Faragher, B. (2004), 'Bullying is detrimental to health, but all bullying behaviours are not necessarily equally damaging', *British Journal of Guidance & Counselling*, 32, 367-387.
- Hogh, A., Hansen, Å. M., Mikkelsen, E. G., & Persson, R. (2012). Exposure to negative acts at work, psychological stress reactions and physiological stress response. *Journal of Psychosomatic Research*, 73(1), 47-52.
- Janoff-Bulman, R. (1989), 'Assumptive worlds and the stress of traumatic events: Applications of the schema construct', *Social Cognition*, 7, 113-136.
- Juvonen, J. and Gross, E.F. (2008), 'Extending the school grounds? Bullying experiences in cyberspace', *The Journal of School Health*, 78, 496-505.

- Kane, K., and Montgomery, K. (1998), 'A framework for understanding dysempowerment in organizations', *Human Resource Management*, 37, 263-275.
- Kiesler, S. (1986), 'Thinking ahead: The hidden messages in computer networks', *Harvard Business Review*, January-February, 46-60.
- Kivimäki, M., Elovainio, M., and Vahtera, J. (2000), 'Workplace bullying and sickness absence in hospital staff', *Occupational and Environmental Medicine*, 57, 656-660.
- Kowalski, R., Limber, S., & Agatston, P. (2008), *Cyber Bullying. Bullying in the Digital Age*, Malden, MA: Blackwell Publishing.
- Lazarus, R.S., & Folkman, S. (1987), 'Transactional theory and research on emotions and coping', *European Journal of Personality*, 1, 141-170.
- Leymann, H. (1996), 'The content and development of mobbing at work', *European Journal of Work and Organizational Psychology*, 5, 165-184.
- Li, Q. (2008), 'A cross-cultural comparison of adolescents' experience related to cyberbullying', *Educational Research*, 50, 223-234.
- Li, Q., Smith, P. K., and Cross, D. (2012), 'Research into cyberbullying', in *Cyberbullying in the Global Playground*, eds. Q. Li, D. Cross, P.K. Smith, Chichester: Wiley-Blackwell, pp.3-12.
- Lim, S., Cortina, L.M., & Magley, V.J. (2008), 'Personal and workgroup incivility: impact on work and health outcomes', *Journal of Applied Psychology*, 93, 95-107.
- Lim, V.K.G., and Teo, T.S.H. (2009), 'Mind your E-manners: Impact of cyber incivility on employees' work attitude and behaviour', *Information and Management*, 46, 419-425.
- Lutgen-Sandvik, P., Tracy, S.J., & Alberts, J.K. (2007), 'Burned by Bullying in the American Workplace: Prevalence, Perception, Degree and Impact', *Journal of Management Studies*, 44, 837-862.

- Marcus, B., Schuler, H., Quell, P. & Humpfner, G. (2002), 'Measuring counterproductivity: Development and initial validation of a German self-report questionnaire', *International Journal of Selection and Assessment*, 10, 18-35.
- Menesini E., Nocentini, A., and Calussi, P. (2011). The measurement of cyberbullying: Dimensional structure and relative item severity and discrimination. *Cyberpsychology, Behavior, and Social Networking*, 14, 267–274.
- Metro. (2014). Mozilla chief Brendan Eich resigns: Can you criticise your boss on Twitter? Retrieved from: <http://metro.co.uk/2014/04/03/mozilla-chief-brendan-eich-resigns-can-you-criticise-your-boss-on-twitter-4688332/>
- Mikkelsen, E.G. and Einarsen, S. (2002), 'Relationships between exposure to bullying at work and psychological and psychosomatic health complaints: the role of state negative affectivity and generalized self-efficacy', *Scandinavian Journal of Psychology*, 43, 397-405.
- Monks, C.P., and Coyne, I. (2011), *Bullying in Different Contexts*, Cambridge: Cambridge University Press.
- Moreno-Jiménez, B., Rodríguez-Muñoz, A., Pastor, J. C., Sanz-Vergel, A. I., & Garrosa, E. (2009), 'The moderating effects of psychological detachment and thoughts of revenge in workplace bullying', *Personality and Individual Differences*, 46, 359-364.
- Motowidlo, S.J., Packard, J.S., and Manning, M.R. (1986), 'Occupational stress: its causes and consequences for job performance', *Journal of Applied Psychology*, 71, 618-629.
- Nagy, M.S. (2002), 'Using a single-item approach to measure facet job satisfaction', *Journal of Occupational and Organizational Psychology*, 75, 77-86.

- Nocentini, A., Calmaestra, J., Schultze-Krumbholz, A., Scheithauer, H., Ortega, R., & Menesini, E. (2010), 'Cyberbullying: labels, behaviours and definition in three European countries', *Australian Journal of Guidance and Counselling*, 20, 129-142.
- Neuman, J., and Baron, R. (2003), 'Social antecedents of bullying: A social interactionist perspective', in *Bullying and Emotional Abuse in the Workplace. International Perspectives in Research and Practice*, eds. S Einarsen, H. Hoel, D. Zapf, and C. Cooper, London: Taylor and Francis, pp. 185-202.
- Nielsen, M. B. (2014), 'What do we know so far? Meta-analytical evidence on the prevalence, antecedents, and outcomes of workplace bullying', *Keynote speech at the 9<sup>th</sup> International Conference on Workplace Bullying and Harassment*, Milan, Italy.
- Nielsen, M. B., Matthiesen, S. B., & Einarsen, S. (2010), 'The impact of methodological moderators on prevalence rates of workplace bullying. A meta-analysis', *Journal of Occupational and Organizational Psychology*, 83, 955-979.
- Parzefall, M.-R., and Salin, D.M. (2010), 'Perceptions of and reactions to workplace bullying: A social exchange perspective', *Human Relations*, 63, 761-780.
- Phippen, A. (2011). 'The Online Abuse of Professionals' Retrieved from [http://www.swgfl.org.uk/getattachment/News/Content/News-Articles/Professionals-Online-Safety-Helpline/Professional-Abuse-Survey-March-2011-Final-\(2\).pdf.aspx](http://www.swgfl.org.uk/getattachment/News/Content/News-Articles/Professionals-Online-Safety-Helpline/Professional-Abuse-Survey-March-2011-Final-(2).pdf.aspx)
- Podsakoff, P.M., MacKenzie, S.B., Lee, J-Y. and Podsakoff, N.P. (2003). 'Common method bias in behavioural research: A critical review of the literature and recommended remedies', *Journal of Applied Psychology*, 88, 879-903.

- Porath, C.L., & Erez, A. (2009), 'Overlooked but not untouched: How rudeness reduces onlookers' performance on routine and creative tasks', *Organizational Behavior and Human Decision Processes*, 109, 29-44.
- Preacher, K.J., and Hayes, A.F. (2008), 'Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models', *Behavior Research Methods*, 40, 879-891.
- Privitera, C., and Campbell, M.A. (2009), 'Cyberbullying: the new face of workplace bullying?', *CyberPsychology & Behavior*, 12, 395-400.
- Rayner, C. (1997), 'The incidence of workplace bullying', *Journal of Community & Applied Social Psychology*, 7, 199-208.
- Rayner, C., & Cooper, C. (2006), 'Workplace Bullying', in *Handbook of Workplace Violence*, eds. K. Kelloway, J. Barling and J Hurrell, Sage Publications, California, pp. 121-146.
- Rivers, I., Chesney, T., and Coyne, I. (2011), 'Cyberbullying', in *Bullying in Different Contexts*, eds. C.P. Monks and I. Coyne, Cambridge: Cambridge University Press, pp. 211-230.
- Rivers, I., and Noret, N. (2010), "'I h8 u": findings from a five-year study of text and email bullying', *British Educational Research Journal*, 36, 643-671.
- Rodriguez-Munoz, A., Baillien, E., De Witte, H., Moreno-Jimenez, B., and Pastor, J.C. (2009), 'Cross-lagged relationships between workplace bullying, job satisfaction and engagement: Two longitudinal studies', *Work & Stress*, 23, 225-243.
- Samnani, A. K., and Singh, P. (2012), '20 years of workplace bullying research: a review of the antecedents and consequences of bullying in the workplace', *Aggression and Violent Behavior*, 17(6), 581-589.
- Samnani, A. K., Singh, P., and Ezzedeen, S. (2013) 'Workplace bullying and employee performance: An attributional model', *Organizational Psychology Review*, 3(4), 337-359.

- Scarpello, V., and Campbell, J.P. (1983), 'Job Satisfaction: Are All the Parts There?', *Personnel Psychology*, 36, 577-600.
- Siegel, J., Dubrovsky, V., Kiesler, S., and Mcguire, T. (1986), 'Group Processes in Computer-Mediated Communication', *Organizational Behavior and Human Decision Processes*, 37, 157-187.
- Slonje, R., and Smith, P.K. (2008), 'Cyberbullying: another main type of bullying?', *Scandinavian Journal of Psychology*, 49, 147-154.
- Smith, C. A., & Ellsworth, P. C. (1987), 'Patterns of appraisal and emotion related to taking an exam', *Journal of Personality and Social Psychology*, 52, 475-488.
- Smith, P.K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008), 'Cyberbullying: its nature and impact in secondary school pupils', *Journal of Child Psychology and Psychiatry*, 49, 376-385.
- Spector, P.E. (2006), 'Method variance in organizational research: Truth or urban legend?', *Organizational Research Methods*, 9, 221-232.
- Stanton, J.M., Balzer, W.K., Smith, P.C., Parra, L.F., & Ironson, G. (2001), 'A General Measure of Work Stress: The Stress in General Scale', *Educational and Psychological Measurement*, 61, 866-888.
- Steiger, J. H. (1980), 'Tests for comparing elements of a correlation matrix', *Psychological Bulletin*, 87, 245-251.
- Sticca, F., & Perren, S. (2013), 'Is cyberbullying worse than traditional bullying? Examining the differential roles of medium, publicity, and anonymity for the perceived severity of bullying', *Journal of youth and adolescence*, 42, 739-750.
- Suler, J. (2004), 'The online disinhibition effect', *Cyberpsychology & Behavior*, 7, 321-326.

- Tepper, B. J. (2000), 'Consequences of abusive supervision', *Academy of Management Journal*, 43, 178-190.
- Tokunaga, R. S. (2010), 'Following you home from school: A critical review and synthesis of research on cyberbullying victimization', *Computers in Human Behavior*, 26, 277-287.
- Van Cleemput, K., Vandebosch, H., and Pabian, S. (2014), 'Personal characteristics and contextual factors that determine "helping" "joining in," and "doing nothing" when witnessing cyberbullying', *Aggressive Behavior*, 40(5), 383-396.
- Van Dyne, L., Jehn, K. A., and Cummings, A. (2002). Differential effects of strain on two forms of work performance: individual employee sales and creativity. *Journal of Organizational Behavior*, 23, 57-74
- Vartia, M.A. (2001), 'Consequences of workplace bullying with respect to the well-being of its targets and the observers of bullying', *Scandinavian Journal of Work, Environment & Health*, 27, 63-69.
- Watson, D., Clark, L. and Tellegen, A. (1988), 'Development and validation of brief measures of positive and negative affect: The PANAS scale', *Journal of Personality and Social Psychology*, 54, 1063-1070.
- Weatherbee, T. G., and Kelloway, E. K. (2006), 'A Case of Cyberdeviancy: CyberAggression in the Workplace', in *Handbook of Workplace Violence*, eds. E.K. Kelloway, J. Barling, and J.J. Hurrell, Thousand Oaks, CA: Sage Publications, Inc, pp. 445-487.
- Wood, S., Braeken, J., and Niven, K. (2013), 'Discrimination and well-being in organizations: Testing the differential power and organizational justice theories of workplace aggression', *Journal of Business Ethics*, 115, 617-634.

- Woodrow, C., and Guest, D. E. (2014). When good HR gets bad results: exploring the challenge of HR implementation in the case of workplace bullying. *Human Resource Management Journal*, 24, 38-56.
- Ybarra, M.L., and Mitchell, K.J. (2004), 'Youth engaging in online harassment: associations with caregiver-child relationships, Internet use, and personal characteristics', *Journal of Adolescence*, 27, 319-36.
- Ybarra, M.L., Mitchell, K.J., Wolak, J., and Finkelhor, D. (2006), 'Examining characteristics and associated distress related to Internet harassment: findings from the Second Youth Internet Safety Survey', *Pediatrics*, 118, 1169-1177.

Table 1. Zero-order correlations for study one variables

	CNAQw	CNAQp	CNAQt	NAQw	NAQp	NAQphy	NAQt	MS	JS
CNAQw	(.88)	.60***	.97***	.82***	.39***	.43***	.76***	.43***	-.34***
CNAQp		(.86)	.77***	.53***	.73***	.33***	.64***	.44***	-.21*
CNAQt			(.90)	.80***	.53***	.44***	.79***	.47***	-.33***
NAQw				(.83)	.49***	.51***	.95***	.43***	-.22*
NAQp					(.86)	.46***	.70***	.40***	-.22*
NAQphy						(.80)	.69***	.12	-.06
NAQt							(.90)	.41***	-.22*
MS								(.81)	-.30**
JS									NA

Alpha levels in diagonal. CNAQw (cyberbullying work); CNAQp (cyberbullying person); CNAQt (cyberbullying total); NAQw (offline bullying work); NAQp (offline bullying person); NAQphy (offline bullying physical); NAQt (offline bullying total); MS (mental strain); JS (job satisfaction). \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

Table 2. Hierarchical regression analyses of the effect of cyberbullying and offline bullying on mental strain and job satisfaction (study 1)

	Mental Strain			Job Satisfaction		
	$\Delta R^2$	B	$\beta$	$\Delta R^2$	B	B
Step 1:	.01			.01		
Age		.00 [-.10, .10]	.00		.01 [-.02, .04]	.09
Gender		-.41 [-2.3, 1.5]	-.04		-.10 [-.59, .40]	-.04
Tenure		.00 [-.15, .16]	.02		-.02 [-.06, .02]	-.10
University		.79 [-1.5, 3.1]	.06		-.25 [-.85, .35]	-.08
Step 2:	.23***			.12**		
Age		-.02 [-.11, .07]	-.04		.01 [-.01, .04]	.11
Gender		.36 [-1.4, 2.1]	.03		-.18 [-.65, .30]	-.07
Tenure		.03 [-.11, .16]	.04		-.02 [-.06, .02]	-.12
University		.11 [-2.0, 2.2]	.01		-.11 [-.68, .46]	-.04
CNAQt		.24 [.03, .44]	.31*		-.07 [-.13, -.02]	-.40**
NAQt		.13 [-.05, .31]	.20		.01 [-.04, .06]	.06

95% Confidence intervals in brackets around B values. For mental strain full model,  $R = .483$ ,  $R^2 = .233$ . For job satisfaction full model,  $R = .368$ ,  $R^2 = .136$ . \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

Table 3. Zero-order correlations for study two variables

	CNAQw	CNAQp	CNAQt	CNAQi	MS	JS	NA	Pressure
CNAQw	(.85)	.70***	.98***	.05	.34**	-.42***	.42***	.47***
CNAQp		(.73)	.84***	-.10	.19	-.25*	.31**	.25*
CNAQt			(.88)	.01	.32**	-.39***	.42***	.44***
CNAQi				(.95)	.19	-.03	.24*	.07
MS					(.89)	-.33**	.68***	.34**
JS						NA	-.32**	-.13
NA							(.89)	.24*
Pressure								(.85)

Alpha levels in diagonal. CNAQi (cyberbullying intensity); NA (Negative affectivity); Pressure (job stress). \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

Table 4. Hierarchical regression analyses of cyberbullying exposure and intensity on mental strain and job satisfaction (study 2)

	Mental Strain			Job Satisfaction		
	$\Delta R^2$	B	$\beta$	$\Delta R^2$	B	$\beta$
Step 1:	.15			.02		
Age		.03 [-.08, .15]	.06		-.01 [-.03, .02]	-.06
Gender		1.43 [-1.0, 3.9]	.13		.12 [-.33, .56]	.06
University		.79 [-2.6, 3.3]	.03		-.01 [-.55, .52]	-.01
Pressure		.26 [.10, .43]	.35**		-.02 [-.05, .02]	-.12
PC home		-.05 [-1.0, .94]	-.01		.01 [-.17, .19]	.02
PC work		-.91 [-3.6, 1.7]	-.07		-.12 [-.60, .36]	-.06
Step 2:	.04			.21***		
Age		.03 [-.09, .14]	.05		-.00 [-.02, .02]	-.04
Gender		1.48 [-1.1, 4.1]	.13		.01 [-.42, .44]	.01
University		.22 [-2.7, 3.2]	.02		.01 [-.47, .50]	.01
Pressure		.18 [-.01, .36]	.24		.02 [-.01, .05]	.14
PC home		-.32 [-1.3, .69]	-.07		.11 [-.05, -.28]	.15
PC work		-.51 [-3.2, 2.1]	-.04		-.27 [-.70, .17]	-.13
CNAQt		.23 [-.02, .47]	.23		-.09 [-.13, -.05]	-.55***
CNAQi		.02 [-.08, .12]	.05		.00 [-.02, .02]	.02

95% Confidence intervals in brackets around B values. For mental strain full model,  $R = .440$ ,  $R^2 = .193$ . For job satisfaction full model,  $R = .486$ ,  $R^2 = .236$ . \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

Table 5. Zero-order correlations for study three variables

	CNAQw	CNAQp	CNAQt	Witness	MS	JS	NA	IJ	Pressure
CNAQw	(.83)	.60***	.99***	.45***	.29**	-.34***	.30**	-.50***	.31**
CNAQp		(.62)	.71***	.31**	.24*	-.24*	.16	-.38***	.22*
CNAQt			(.84)	.45***	.30**	-.34***	.30**	-.51***	.31**
Witness				(.91)	-.11	.10	-.02	.13	.02
MS					(.89)	-.46***	.56***	-.37***	.35***
JS						NA	-.31**	.46***	-.19*
NA							(.89)	-.19*	.17
IJ								(.94)	.35***
Pressure									(.85)

Alpha levels in diagonal. \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ . Witness = witnessing cyberbullying;

IJ = interpersonal justice

Table 6. Bootstrap analysis of the serial multiple mediator models – experiencing and witnessing cyberbullying acts (study 3)

	Effect	BCa 95% CI	
		Lower	Upper
<i>Experiencing cyberbullying acts</i>			
Total indirect effect → MS	.2238	.0826	.4114
CNAQ → justice → NA → MS	.0077	-.0404	.0771
CNAQ → justice → MS	.0845	-.0012	.1993
CNAQ → NA → MS	.1316	.0248	.3144
Total indirect effect → JS	-.0460	-.0782	-.0235
CNAQ → justice → NA → JS	-.0006	-.0081	.0029
CNAQ → justice → JS	-.0332	-.0651	-.0161
CNAQ → NA → JS	-.0122	-.0356	-.0017
<i>Witnessing cyberbullying acts</i>			
Total indirect effect → MS	.0098	-.0791	.1024
CNAQw → justice → NA → MS	.0063	-.0020	.0495
CNAQw → justice → MS	.0181	-.0060	.0810
CNAQw → NA → MS	-.0146	-.1008	.0535
Total indirect effect → JS	-.0031	-.0211	.0129
CNAQw → justice → NA → JS	-.0004	-.0044	.0003
CNAQw → justice → JS	-.0044	-.0227	.0053
CNAQw → NA → JS	.0017	-.0047	.0115

Table 7. Hierarchical regression analyses of witnessing cyberbullying on mental strain and job satisfaction (study 3)

	Mental Strain			Job Satisfaction		
	$\Delta R^2$	B	B	$\Delta R^2$	B	B
Step 1:	.15			.10		
Age		.00 (-.13, .13)	.01		.00 (-.02, .03)	.04
Gender		-.71 (-3.2, 1.8)	-.06		.24 (-.21, .69)	.11
University		-1.00 (-3.6, 1.6)	-.08		-.23 (-.70, .23)	-.12
Tenure		.00 (-.02, .02)	.01		.00 (-.00, .00)	.14
Pressure		.31 (.12, .50)	.34**		-.04 (-.07, -.01)	-.25*
PC home		-.09 (-.97, .80)	-.02		.03 (-.13, .19)	.04
PC work		1.07 (-2.3, 4.4)	.07		.29 (-.33, .91)	.10
Step 2:	.01			.03		
Age		-.01 (-.14, .13)	-.11		.01 (-.02, .03)	.06
Gender		-.95 (-3.5, 1.6)	-.08		.31 (-.15, .76)	.14
University		-.89 (-3.5, 1.7)	-.07		-.25 (-.71, .21)	-.11
Tenure		.00 (-.02, .02)	.00		.00 (-.00, .01)	.15
Pressure		.32 (.13, .50)	.35*		-.04 (-.08, -.01)	-.26*
PC home		-.12 (-1.0, .76)	-.03		.05 (-.11, .21)	.06
PC work		.82 (-2.6, 4.2)	.05		.36 (-.26, .98)	.12
Witness		-.08 (-.24, .09)	-.10		-.03 (-.00, .05)	.18

95% Confidence intervals in brackets around B values. For mental strain full model,  $R = .394$ ,  $R^2 = .155$ . For job satisfaction full model,  $R = .317$ ,  $R^2 = .362$ . \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .