

12-1-2019

An investigation into the relationships between bullying, discrimination, burnout and patient safety in nurses and midwives: is burnout a mediator?

Judith Johnson
University of Leeds

Lorraine Cameron
Bradford Royal Infirmary

Lucy Mitchinson
University of Leeds

Mayur Parmar
University of Leeds, mparmar@nova.edu

Gail Opio-Te
Bradford District Care NHS Foundation Trust

See next page for additional authors

Follow this and additional works at: https://nsuworks.nova.edu/hpd_facarticles



Part of the [Medicine and Health Sciences Commons](#), and the [Pharmacology Commons](#)

NSUWorks Citation

Johnson, Judith; Cameron, Lorraine; Mitchinson, Lucy; Parmar, Mayur; Opio-Te, Gail; Louch, Gemma; and Grange, Angela, "An investigation into the relationships between bullying, discrimination, burnout and patient safety in nurses and midwives: is burnout a mediator?" (2019). *HPD Articles*. 17.
https://nsuworks.nova.edu/hpd_facarticles/17

This Article is brought to you for free and open access by the HPD Collected Materials at NSUWorks. It has been accepted for inclusion in HPD Articles by an authorized administrator of NSUWorks. For more information, please contact nsuworks@nova.edu.

Authors

Judith Johnson, Lorraine Cameron, Lucy Mitchinson, Mayur Parmar, Gail Opio-Te, Gemma Louch, and Angela Grange

An investigation into the relationships between bullying, discrimination, burnout and patient safety in nurses and midwives: is burnout a mediator?

Judith Johnson 

School of Psychology, University of Leeds, UK
Bradford Institute for Health Research, Bradford Royal Infirmary, UK

Lorraine Cameron*

Bradford Institute for Health Research, Bradford Royal Infirmary, UK

Lucy Mitchinson

School of Psychology, University of Leeds, UK

Mayur Parmar

School of Psychology, University of Leeds, UK

Gail Opio-te

Silsden District Nurse Team, Bradford District Care NHS Foundation Trust, UK

Gemma Louch

Bradford Institute for Health Research, Bradford Royal Infirmary, UK

Angela Grange

Bradford Institute for Health Research, Bradford Royal Infirmary, UK

Abstract

Background: Bullying and discrimination may be indirectly associated with patient safety via their contribution to burnout, but research has yet to establish this.

Corresponding author:

Judith Johnson, University of Leeds, Lifton Place, Leeds, LS2 9JT, UK.

Email: j.johnson@leeds.ac.uk

*We are sad to say that Lorraine Cameron has died since the acceptance of this article. Lorraine worked to promote fairness and equality in the workforce and championed this project with enthusiasm. We are grateful to have worked with her.

Aims: The aims of this study were to investigate the relationships between workplace bullying, perceived discrimination, levels of burnout and patient safety perceptions in nurses and midwives and to assess whether bullying and discrimination were more frequently experienced by Black, Asian and minority ethnic than White nurses and midwives.

Methods: In total, 528 nurses and midwives were recruited from four hospitals in the United Kingdom to complete a cross-sectional survey between February and March 2017. The survey included items on bullying, discrimination, burnout and individual level and ward level patient safety perceptions. Data were analysed using path analysis.

Results: The results were reported according to the STROBE checklist. Bullying and discrimination were significantly associated with higher burnout. Higher burnout was in turn associated with poorer individual- and ward-level patient safety perceptions. Experiences of discrimination were three times more common among Black, Asian and minority ethnic than White nurses and midwives, but there was no significant difference in experiences of bullying.

Conclusions: Bullying and discrimination are indirectly associated with patient safety perceptions via their influence on burnout. Healthcare organisations seeking to improve patient care should implement strategies to reduce workplace bullying and discrimination.

Keywords

burnout, discrimination, diversity, patient safety, workforce and employment

Introduction

Numerous studies have found an association between higher burnout and poorer patient safety (Hall et al., 2016; Panagioti et al., 2018; Hall et al., 2018; Johnson et al., 2017), suggesting that reducing burnout could be an area for patient safety improvement initiatives to target. Recent reviews of burnout-reduction interventions suggest these are effective but effect sizes are small (Panagioti et al., 2017; West et al., 2016). Organisational interventions (e.g. work scheduling, staff training) appear to be most effective (Panagioti et al., 2018). However, it is unclear which forms of organisational intervention may work best. One possible area organisational interventions could focus on is workplace bullying and discrimination, but further research is needed to explore this.

Literature review

Bullying in hospitals and healthcare organisations is an issue of international concern and has been experienced by between 20% and 77% of nurses (Rosenstein and Naylor, 2012; Sellers et al., 2012; Roche et al., 2010; Stanley et al., 2007; Farrell et al., 2006; Ganz et al., 2015; Carter et al., 2013). Black, Asian and minority ethnic (BAME) and immigrant nurses are more likely than White nurses to experience workplace bullying (Deery et al., 2011). This is possibly due to a higher likelihood of bullies targeting employees whose appearance or accent is different to the wider workplace population (Deery et al., 2011; Berdahl and Moore, 2006). Similarly, discrimination in nursing is widespread. In the United Kingdom (UK), the National Health Service (NHS) recruitment process favours White applicants,

with White applicants 1.57 times more likely to be appointed from shortlisting as BAME applicants (Kline et al., 2017). In the United States (US), 40% of foreign-educated nurses report experiencing discriminatory practices in relation to benefits, wages or shift/unit assignments (Pittman et al., 2014).

There is reason to believe these elevated rates of discrimination and bullying could be a patient safety concern. Previous research links bullying and discrimination with burnout (Volpone and Avery, 2013; Laschinger et al., 2012), and some studies have also directly linked bullying with patient safety (Houck and Colbert, 2017). However, no studies have included UK hospital nurses, where a quarter of entry-grade nurses are BAME (Kline et al., 2017). Furthermore, there is a lack of research into possible associations between discrimination and patient safety, and it remains unclear whether addressing discrimination could improve patient safety. As significant global shortages of healthcare workers have resulted in net migration of nurses from low- to higher-income countries, proportions of BAME nurses in higher income countries could be expected to rise and the need to understand these issues will become increasingly important (Aluttis et al., 2014).

When this evidence is considered together, it seems likely that bullying and discrimination may be indirectly associated with patient safety via their contribution to burnout, but research has yet to establish this. A proposed model of the associations between bullying, discrimination, burnout and perceptions of patient safety is presented in Figure 1. If supported, this would suggest interventions that reduce bullying and discrimination may reduce burnout. Such interventions may also improve other outcomes linked with burnout such as patient experience, quality of care, staff retention and absence rates.

In summary, our research aimed to investigate the relationships between workplace bullying, perceived discrimination, levels of burnout and patient safety perceptions using path analysis. We predicted that perceived bullying and discrimination would be associated with higher burnout, which would in turn be associated with poorer perceptions of patient safety in nurses and midwives. A corollary prediction was that experiences of workplace

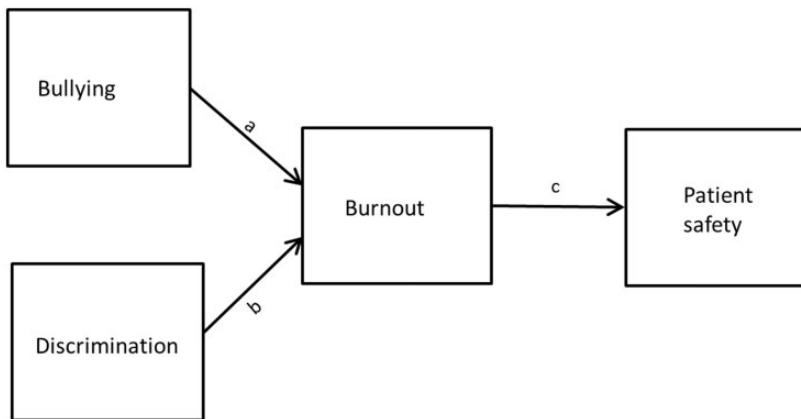


Figure 1. Proposed model of the relationships between bullying, discrimination, burnout and patient safety perceptions.

bullying and perceived discrimination would be more frequent in BAME than White nurses and midwives.

Methods

Participants

All registered and practising hospital nurses and midwives from four hospitals within an acute NHS Trust were invited to participate in the study in the UK between February and March 2017. We aimed to recruit over 320 participants; this is the suggested sample size proposed by Wolf et al. (2013) as being adequate for testing Structural Equation Models investigating mediation where there is up to 20% missing data per indicator. All participants provided informed consent prior to completing the study.

Procedure

Participants were informed of the study through a global email. Eligible participants, identified from the Trust Electronic Staff Record, received a paper questionnaire pack.

We were aware some participants may be concerned that their responses would be shared with the Trust. To address this, the information sheet informed participants that only research team members would have access to their data and their responses would be entirely confidential. The participants were asked to return questionnaires via the Trust's internal mail. After 2 weeks, reminders and a second paper questionnaire were sent to participants who had not responded.

Design

The study used a cross-sectional survey design. Results were reported according to the STROBE checklist (supplementary file 1).

Measures

Demographic information. Questionnaire items asked for information regarding gender, ethnicity, age, job role, highest level of qualification, number of years qualified and time spent working within the Trust.

Bullying and discrimination. Respondents were asked two items based on the NHS Workforce Race Equality Standards and Indicators (WRES), each requiring a 'yes' or 'no' response. The first measured discrimination: 'In the last 12 months have you personally experienced discrimination at work?' (participants were provided with the following definition: 'Discrimination is when you are treated as less favourable than someone else because of your ethnicity, age, gender, etc.'). The second measured bullying, harassment and abuse: 'In the past 12 months have you experienced harassment, bullying or abuse from other staff at work?' (participants were provided with the following definition: 'Harassment is unwanted conduct that has the purpose of violating your dignity or creating an intimidating, hostile, degrading, humiliating or offensive environment'). For both items, 'none' was coded as '1' and occurrence of harassment/bullying or discrimination was coded as '2'.

Burnout. The Oldenburg Burnout Inventory (Demerouti et al., 2000) consists of two eight-item subscales, Disengagement and Exhaustion. Disengagement subscale items include 'Over time, one can become disconnected from this type of work'. Exhaustion subscale items include 'There are days when I feel tired before I arrive at work'. Items were rated on a four-point scale from 1 ('Strongly disagree') to 4 ('Strongly agree'). Possible scores ranged from eight to 32 on each subscale, with higher scores indicating higher burnout. The measure demonstrated good internal consistency in our study ($\alpha=0.80$ for Emotional Exhaustion, $\alpha=0.79$ for Disengagement, $\alpha=0.88$ for the full scale).

Patient safety perceptions. Both individual- and ward-/unit-level patient safety perceptions were measured. Previous research suggests this approach provides complementary information that varies between nurses according to individual differences and stress (Louch et al., 2016; Louch et al., 2017).

Individual-level safety perceptions. Individual level safety perceptions were measured using the one-item Safe Practitioner Measure (Louch et al., 2016) ('My practice is not as safe as it could be because of work related factors/conditions'). This is scored on a five-point scale from one ('Strongly disagree') to five ('Strongly agree') (Louch et al., 2016). Responses were reverse coded so higher scores suggested more positive safety perceptions.

Ward-/unit-level safety perceptions. To assess ward-/unit-level safety perceptions, participants responded to a subscale from the Hospital Survey on Patient Safety Culture (Sorra and Nieva, 2004) focusing on 'Perceptions of Patient Safety'. This comprises four items (e.g. 'It is just by chance that more serious mistakes don't happen around here'). Items were scored on a five-point scale from one ('Strongly disagree') to five ('Strongly agree'), with total possible scores ranging from four to 20 and higher scores suggesting more positive perceptions. The measure demonstrated good internal consistency in our study ($\alpha=.80$).

Data analysis

Descriptive statistics and correlations were conducted for study variables. For the purposes of the inferential statistics, ethnicity was collapsed into two categories to allow for comparisons (White was coded as '1' and BAME was coded as '2'). Spearman's Rho correlations were conducted for most variables, as several variables were not normally distributed. Point-biserial correlations were conducted for binary variables (bullying, discrimination and ethnicity) with other continuous and ordinal variables. It was not possible to assess correlations between binary variables. Odds ratios and Fisher's Exact test were calculated to investigate whether experiences of bullying and discrimination varied according to ethnicity (White vs BAME) (McHugh, 2009).

For the purposes of path analysis, the two burnout facets were totalled to create one burnout item. This was due to the two facets of burnout being closely related, which can adversely affect model fit in SEM when included separately as endogenous variables. Furthermore, previous research suggests both facets have a similar association with patient safety perceptions, so they would be unlikely to demonstrate different relationships with other variables in these analyses (Johnson et al., 2017). Missing data analyses were undertaken for variables to be included in the path analyses. Rates of missing data for variables varied between 0.9% (gender) to 12.5% (Burnout). Little's chi-

square statistic was not significant, suggesting no systematic pattern to the missing data ($x = 26.74$, $df = 21$, $p = .18$) (Little, 1988), and as overall missing data rates were $<20\%$, data imputation was conducted (Garson, 2015). This was undertaken with regression imputation in AMOS 22. This imputes predicted values in place of missing values using linear regression, which estimates these values based on the observed (i.e. non-missing) values of that individual (Arbuckle, 2013).

To test the proposed model of the relationships between bullying, discrimination, burnout and each of the patient safety perception scales, SEM path analyses were conducted in AMOS 22. This enabled the use of the bootstrapping method to estimate model fit and regression weights, which is a powerful non-parametric approach. As it uses a resampling procedure, data distributions do not need to conform to assumptions of parametric tests. To reduce estimation error we followed the advice of Cole and Preacher (2014): the multiple-item scales we included (burnout, ward-level patient safety perceptions) were highly reliable measures and we kept our models simple.

Bootstrapping was used to test two models (5000 bootstrap samples; 95% confidence interval (CI)), both of which controlled for age and gender. Model 1 tested a proposed relationship between study variables whereby bullying and discrimination were associated with higher burnout, which in turn was associated with lower individual-level patient safety perceptions. Model 2 repeated this, replacing the outcome variable with the ward-/unit-level perceptions of patient safety measure. Bias-corrected bootstrap CIs were reported (Cheung and Lau, 2007). For each path tested in the analyses, standardised beta coefficients were reported followed by CIs (lower limit, upper limit) and the significance value, in line with previous similar studies (Johnson et al., 2017; Holden et al., 2011).

To assess model fit, we reported chi-square value, the root mean square error of approximation (RMSEA) and the comparative fit index (CFI), in line with recommendations by Hooper et al. (2008). Hooper et al. (2008) note that chi-square has several severe limitations, namely that it assumes multivariate normality and rejects properly specified models that do not meet this assumption and it is nearly always significant when samples are large. As such, the RMSEA and CFI were also reported to provide alternative fit indices. RMSEA values ≤ 0.08 were deemed to signal acceptable fit and values ≤ 0.06 were deemed to signal good fit. CFI values ≥ 0.90 were used to indicate acceptable fit and values ≥ 0.95 were used to indicate good fit (Hooper et al., 2008).

Results

Participant characteristics

In total 1704 participants were contacted and 538 responded (M age = 43.55, SD = 12.72, 90.5% female, gender data missing for 1.5% of participants), producing a response rate of 31.6%. We were unable to gather information on why non-responders chose not to participate. Demographic information for participants is presented in Table 1. Participants had been qualified an average of 16.89 years (SD = 11.29) and had been working for the Trust for an average of 11.91 years (SD = 10.39).

Bivariate associations

Descriptive statistics and bivariate associations are presented in Table 2. The occurrence of bullying was associated with higher disengagement ($r_{pb} = 0.18$, $p < 0.001$) and

Table 1. Demographic information for participants.

	Number	%
Ethnicity		
White	428	79.6
Asian	83	15.4
African-Caribbean	12	2.2
Mixed ethnicity	7	1.4
Other ethnicity	2	0.4
Preferred not to say	2	0.4
Missing	4	0.7
Education (highest attainment)		
PhD or doctoral degree	2	0.4
Master's degree	42	7.8
Postgraduate diploma	81	15.1
Bachelor's degree	256	47.6
Advanced diploma	99	18.4
A levels or equivalent	19	3.5
Other attainment	27	5.0
Missing	12	2.2
Discipline		
Nursing	458	85.1
Midwifery	79	14.7
Missing	1	0.2
Band		
8a or above (e.g. matron/lead nurse)	38	7.1
7 (ward manager)	113	21.0
6 (ward sister/charge nurse)	159	29.6
5 (staff nurse grade)	217	40.3
Missing	1	0.2

exhaustion ($r_{pb} = 0.15, p = 0.001$), and lower individual- and ward-level safety perceptions ($r_{pb} = -0.14, p = 0.001$ and $r_{pb} = -0.16, p < 0.001$, respectively). Occurrence of discrimination was also associated with higher disengagement ($r_{pb} = 0.15, p = 0.001$) and exhaustion ($r_{pb} = 0.15, p = 0.001$) and lower individual- and ward-level safety perceptions ($r_{pb} = -0.11, p = 0.016$ and $r_{pb} = -0.10, p = 0.023$, respectively). Disengagement and exhaustion were positively associated with each other ($r_s = 0.62, p < 0.001$) and both burnout facets were inversely associated with safety perceptions ($r_s = -0.41, p < 0.001$ for individual perceptions and $r_s = -0.39, p < 0.001$ for ward perceptions for disengagement, $r_s = -0.41, p < 0.001$ for individual perceptions and $r_s = -0.35, p < 0.001$ for ward perceptions for exhaustion).

Path analyses of the associations between bullying, discrimination, burnout and safety perceptions

Two path analyses were tested, the first with ward-level patient safety perceptions as the outcome and the second with individual-level patient safety perceptions as the outcome.

Table 2. Means, standard deviations^a and correlations for variables.

	Mean	2	3	4	5	6	7
1. Bullying ^b	—	—	.18***	.15**	-.14**	-.16***	—
2. Discrimination ^b	—		.15**	.15**	-.11*	-.10*	—
3. Disengagement (burnout facet)	16.90 3.43			.62***	-.41***	-.39***	.07
4. Exhaustion (burnout facet)	20.05 3.67				-.41***	-.35***	-.07
5. Individual-level safety (safe practitioner measure)	3.46 1.20					.52***	-.03
6. Work area/unit level safety (AHRQ subscale)	12.90 3.41						.03
7. Ethnicity ^b	—						

* $p < 0.05$, ** $p < .01$, *** $p < 0.001$.

AHRQ: Agency for Healthcare Research and Quality.

^aStandard deviations appear in italics below the means. Spearman's Rho correlations are reported unless point biserial correlations are indicated.

^bThese variables were binary. Ethnicity was divided into White and Black, Asian or minority ethnic (BAME) categories. As such, no mean was calculated for these variables and Point-biserial correlations were conducted.

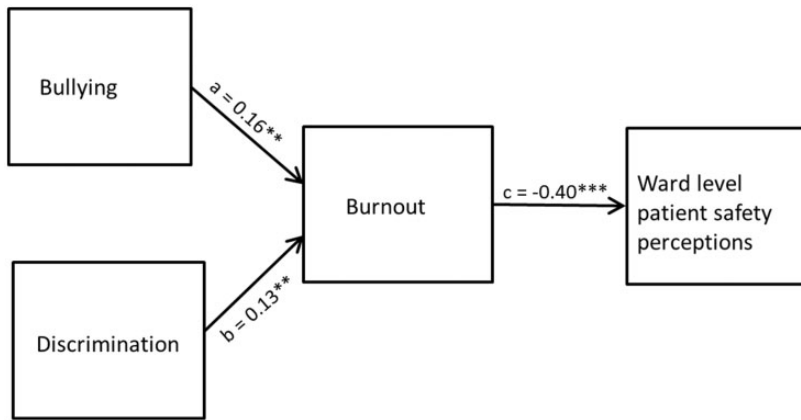


Figure 2. Structural equation model of the relationships between bullying, discrimination, burnout and ward-level patient safety perceptions.

Ward-level safety perceptions. When ward-level safety perceptions were the outcome (Figure 2), the pathway between bullying and burnout was significant ($B = 0.157$, $CI = 0.073, 0.239$, $p = 0.001$), the pathway between discrimination and burnout was significant ($B = 0.129$, $CI = 0.041, 0.219$, $p = 0.003$) and the pathway between burnout and patient safety was significant ($B = -0.404$, $CI = -0.473, -0.326$, $p < 0.001$). Model fit indices were $X^2(6) = 17.652$, $p = 0.007$; $CFI = 0.94$; $RMSEA = 0.06$, suggesting that although the chi-square was significant there was an overall acceptable model fit.

For completeness, we also tested the model when paths between discrimination and ward-level safety perceptions and bullying and safety perceptions were also specified. In this

model, the pathway between bullying and burnout was significant ($B=0.157$, $CI=0.073$, 0.239 , $p=0.001$), the pathway between discrimination and burnout was significant ($B=0.129$, $CI=0.041$, 0.219 , $p=0.003$) and the pathway between burnout and patient safety was significant ($B=-0.387$, $CI=-0.459$, -0.308 , $p<0.001$). However, the pathways between bullying and patient safety ($B=-0.079$, $CI=-0.184$, 0.025 , $p=0.143$) and discrimination and patient safety ($B=-0.008$, $CI=-0.102$, 0.085 , $p=0.857$) were not significant. Model fit indices showed no consistent improvement on the previous model ($X^2(4)=13.473$, $p=0.009$; $CFI=0.95$; $RMSEA=0.07$); as such, the previous model was retained due to its parsimony.

Individual-level safety perceptions. Similarly, when individual level safety perceptions was the outcome (Figure 3), the pathway between bullying and burnout was significant ($B=0.157$, $CI=0.073$, 0.239 , $p=0.001$), the pathway between discrimination and burnout was significant ($B=0.129$, $CI=0.041$, 0.219 , $p=0.003$) and the pathway between burnout and patient safety was significant ($B=-0.473$, $CI=-0.543$, -0.395 , $p<0.001$). Model fit indices were $X^2(6)=18.926$, $p=0.004$; $CFI=0.95$; $RMSEA=0.06$. Although the X^2 test was significant this might be expected given our sample size; however, the other model fit indices suggested good model fit.

For completeness, we also tested the model when paths between discrimination and individual-level safety perceptions and bullying and safety perceptions were also specified. In this model, the pathway between bullying and burnout was significant ($B=0.157$, $CI=0.073$, 0.239 , $p=0.001$), the pathway between discrimination and burnout was significant ($B=0.129$, $CI=0.041$, 0.219 , $p=0.003$) and the pathway between burnout and patient safety was significant ($B=-0.461$, $CI=-0.536$, -0.378 , $p<0.001$). However, the pathways between bullying and patient safety ($B=-0.045$, $CI=-0.126$, 0.039 , $p=0.294$) and discrimination and patient safety ($B=-0.017$, $CI=-0.109$, 0.071 , $p=0.69$) were not significant. The model fit indices were poorer than the previous model ($X^2(4)=17.099$, $p=0.002$; $CFI=0.94$; $RMSEA=0.08$), leading us to reject this model in favour of the former.

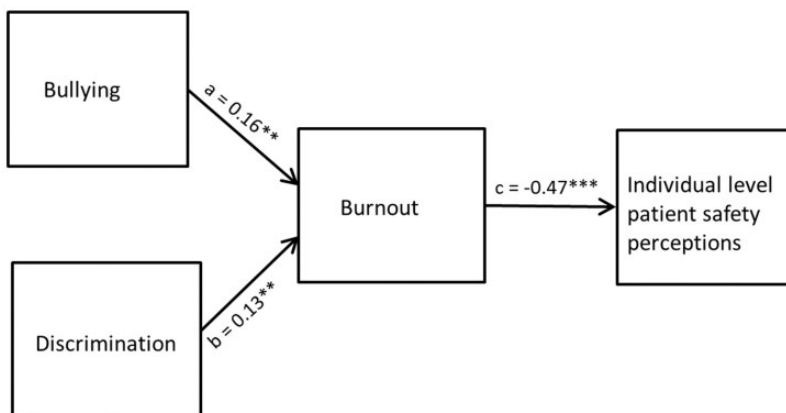


Figure 3. Structural equation model of the relationships between bullying, discrimination, burnout and individual-level patient safety perceptions.

Ethnicity and experiences of bullying and discrimination

A higher rate of BAME participants (18 of 102; 17.6%) reported experiencing bullying in the previous year compared with White participants (52 of 419; 12.4%). The odds of experiencing bullying were 1.5 times higher for BAME participants (odds ratio = 1.51, 95% CI = 0.84, 2.72). However, Fisher's exact test suggested this was not significant, $p = 0.19$.

A higher rate of BAME participants (21 of 102; 20.5%) reported experiencing discrimination at work in the previous year compared with White participants (33 of 421; 7.8%). The odds of experiencing discrimination were three times higher for BAME participants (odds ratio = 3.04, 95% CI = 1.68, 5.54) and Fisher's exact test suggested this was significant, $p < 0.001$.

Discussion

This study reports results from a survey of UK nurses and midwives from four hospitals in one acute NHS organisation. We investigated the relationships between bullying, perceived discrimination, levels of burnout and patient safety perceptions. The results supported our hypothesised model. Both bullying and discrimination were significantly associated with higher burnout. Higher burnout was in turn associated with poorer perceptions of patient safety at both the individual and ward level. Experiences of discrimination were three times more common in BAME than White nurses and midwives; however, although more BAME nurses and midwives experienced bullying than White nurses and midwives, this difference was not significant.

A large number of studies have found that burnout is linked to poorer patient safety (Hall et al., 2016; Panagioti et al., 2018). This finding is less clear when patient safety outcomes are measured using objective measures such as incident reports, possibly due to reporting variability, but consistent and robust when patient safety outcomes are self-reported (Hall et al., 2018; Panagioti et al., 2018). Together, this body of work suggests that reducing burnout could be one target for patient safety initiatives to address. However, burnout reduction interventions have only limited effectiveness (West et al., 2016). Although interventions targeted at the organisation level, addressing areas such as work scheduling and staff training, seem to be most effective (Panagioti et al., 2017), it is unclear which types of organisational interventions produce the greatest reductions in burnout. The present study extends this literature by (a) providing the first evidence that perceived discrimination is associated with patient safety in nurses and midwives and (b) proposing and testing the first proposed framework of the associations between bullying, discrimination, burnout and perceptions of patient safety, and reporting that bullying and discrimination have an indirect relationship with patient safety perceptions that is mediated by burnout. This suggests reducing bullying and discrimination at an organisational level may be one way to reduce burnout and could be useful targets for patient safety initiatives to address. It should be noted, however, that the size of the associations between bullying and burnout and discrimination and burnout was small; one possible avenue for future research to explore could be to investigate whether there are factors that moderate the strength of these relationships.

Global healthcare staff shortages have led to increased migration of nurses and doctors from low- to higher- income countries (Aluttis et al., 2014). Countries including the UK, Netherlands and Australia actively recruit from overseas (WHO, 2014); an analysis of 2011

census data indicated that over 30% of nurses and midwives in Australia were born overseas (Negin et al., 2013) and in the UK in 2017, 20% of nurses joining the NHS were not from the UK (Baker, 2018). The present findings suggest a fair and equal approach to recruitment and promotion for all nurses may support patient safety, and countries who recruit nurses from overseas should take particular care to ensure that any discrimination in their recruitment and promotion practices is reduced.

The present study is the first to investigate associations between bullying and patient safety within UK hospital nurses and midwives. Previous research has focused on nurses in the US, Canada and Australia and has reported that bullying is linked with outcomes such as medication errors (Rosenstein and Naylor, 2012) and fall rates (Roche et al., 2010). The current study extends this by finding a similar association in the UK, where 20% of registered nurses have experienced bullying in the last 6 months (Carter et al., 2013). This adds further evidence that this association may be universal and reducing bullying could be a target for patient safety initiatives to focus on internationally. However, further research is needed to explore these associations in non-English speaking and developing countries.

Our finding that perceived discrimination was higher in BAME nurses and midwives than White nurses and midwives is consistent with previous NHS reports suggesting the likelihood of being appointed to a post following shortlisting is 1.57 higher for White applicants (Kline et al., 2017). It is also consistent with research from the US suggesting that 40% of foreign educated nurses have experienced discrimination (Pittman et al., 2014). However, although BAME nurses and midwives reported higher levels of bullying than White nurses and midwives, this difference was not significant. This contrasts with previous studies suggesting higher rates of bullying in BAME than White nursing staff. For example, Deery et al. (2011) found 18.2% of BAME nurses had experienced verbal harassment from colleagues compared with 10.4% of white nurses. We found that a similar percentage of BAME nurses and midwives reported bullying (17.65%); however, slightly more White nurses and midwives in our sample also reported bullying (12.4%), which may explain why this difference was not significant. Our findings regarding bullying can also be compared with studies in UK nursing students; these suggest rates of bullying are higher in students, with around 40% having experienced it (Birks et al., 2017; Tee et al., 2016). Being bullied can lead student nurses to consider leaving nursing (Tee et al., 2016). Furthermore, a recent study estimated that the annual cost of bullying to the NHS is £2.281 m (Kline and Lewis, 2018). Taken together, it seems that experiences of bullying are common, there is no sign that rates are declining and this problem is financially costly as well as psychologically harmful for those involved.

Implications for clinical practice

Reducing workplace bullying and discrimination in nursing and midwifery may support the delivery of safe patient care. Bullying reduction interventions may involve organisational changes such as introducing procedures to raise awareness of bullying and provide a bullying reporting mechanism. They can also involve individual interventions such as the provision of training and education (e.g. assertiveness training) to change behaviours or perceptions (Gillen et al., 2017), although this approach may place responsibility on the victims of bullying rather than the perpetrators. The strongest evidence supports the Civility, Respect and Engagement in the Workforce intervention, a nationwide initiative by the US Department of Veterans Affairs (Gillen et al., 2017). This involves facilitators meeting

regularly with organisations to create respectful, civil work environments (Osatuke et al., 2009). Interventions to reduce discrimination in recruitment practices include introducing discrimination law, monitoring the diversity of organisations and anonymising as much of the recruitment process as possible (Lloyd, 2010). Although many of these interventions are beyond the scope of individual organisations to implement, Lindsey and colleagues (2013) suggest organisations should pass applications to a 'middle person' to anonymise them and screen out stigmatising information before passing them to decision makers. They also suggest using highly structured interview schedules and appointing interview panels who are low in explicit and implicit bias (Lindsey et al., 2013).

Limitations

This study was limited by its use of a cross-sectional design, which means conclusions regarding causality cannot be drawn. We omitted to ask participants for information about how long they had been working before joining the Trust; this information would have been useful in providing a fuller description of the sample. We based our bullying and discrimination questions on the NHS WRES. This decision meant we used binary items, which reduced variability for statistical analysis. It also meant we omitted to ask participants about indirect discrimination; this information would have complemented the data we gathered regarding direct discrimination and may have allowed for a fuller understanding of the relationships between discrimination, burnout and patient safety. Responses may have been biased by a higher rate of extreme responders participating (those who are experiencing particularly high or low levels of bullying, discrimination, burnout and perceptions of patient safety). Finally, it should be noted that the non-significant difference regarding bullying may have reached significance in a larger sample.

Conclusion

Workplace bullying and discrimination are associated with higher levels of burnout, which are in turn associated with poorer individual- and ward-level patient safety perceptions in hospital nurses and midwives. BAME nurses and midwives experience higher levels of discrimination than White nurses and midwives. Healthcare organisations seeking to improve their levels of patient safety should implement interventions to reduce bullying and discrimination within their recruitment practices.

Key points for policy, practice and/or research

- BAME nurses and midwives are three times more likely to experience discrimination at work than White nurses and midwives.
- Bullying and discrimination are indirectly associated with patient safety perceptions, via their influence on burnout.
- Patient safety interventions in nurses and midwives should target bullying and discrimination.
- When appointing nurses and midwives, healthcare organisations should use methods to reduce discrimination against applicants from ethnic minority groups.

Author's Note

Judith Johnson is also affiliated to School of Public Health and Community Medicine, Faculty of Medicine, University of New South Wales, Sydney, Australia.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Ethics

The study was approved by the University of Leeds, School of Psychology Ethics Committee on 20 October 2016 (Ref: 16-0267) and the Health Regulatory Authority on 19 January 2017 (Ref: ID 217229).

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This article presents independent research supported by the National Institute for Health Research (NIHR) Yorkshire and Humber Patient Safety Translational Research Centre (NIHR YH PSTRC) and NIHR Collaboration for Leadership in Applied Health Research and Care Yorkshire and Humber (NIHR CLAHRC YH). www.clahrc-yh.nir.ac.uk. (Reference: NIHR ISCLA-0113-10020). The views and opinions expressed are those of the authors, and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

Supplemental Material

Supplemental material for this article is available online.

ORCID iD

Judith Johnson  <https://orcid.org/0000-0003-0431-013X>

References

- Aluttis C, Bishaw T and Frank MW (2014) The workforce for health in a globalized context – global shortages and international migration. *Global Health Action* 7, 10.3402/gha.v3407.23611.
- Arbuckle JL (2013) *IBM® SPSS® Amos™ 22 User's Guide*. IBM Corp.
- Baker C (2018) *NHS staff from overseas: Statistics*. London: House of Commons Library.
- Berdahl JL and Moore C (2006) Workplace harassment: Double jeopardy for minority women. *Journal of Applied Psychology* 91: 426.
- Birks M, Cant RP, Budden LM, et al. (2017) Uncovering degrees of workplace bullying: A comparison of baccalaureate nursing students' experiences during clinical placement in Australia and the UK. *Nurse Education in Practice* 25: 14–21.
- Carter M, Thompson N, Crampton P, et al. (2013) Workplace bullying in the UK NHS: A questionnaire and interview study on prevalence, impact and barriers to reporting. *BMJ open* 3: e002628.
- Cheung GW and Lau RS (2007) Testing mediation and suppression effects of latent variables: Bootstrapping with structural equation models. *Organizational Research Methods* 11(2): 296–325.
- Cole DA and Preacher KJ (2014) Manifest variable path analysis: Potentially serious and misleading consequences due to uncorrected measurement error. *Psychological Methods* 19: 300.
- Deery S, Walsh J and Guest D (2011) Workplace aggression: The effects of harassment on job burnout and turnover intentions. *Work, Employment and Society* 25: 742–759.

- Demerouti E, Bakker AB, Nachreiner F, et al. (2000) A model of burnout and life satisfaction amongst nurses. *Journal of Advanced Nursing* 32: 454–464.
- Farrell GA, Bobrowski C and Bobrowski P (2006) Scoping workplace aggression in nursing: Findings from an Australian study. *Journal of Advanced Nursing* 55: 778–787.
- Ganz FD, Levy H, Khalaila R, et al. (2015) Bullying and its prevention among intensive care nurses. *Journal of Nursing Scholarship* 47: 505–511.
- Garson DG (2015) *Missing Values Analysis and Data Imputation*. Asheboro, USA: Statistical Associates Publishing.
- Gillen PA, Sinclair M, Kernohan WG, et al. (2017) Interventions for prevention of bullying in the workplace. *Cochrane Database of Systematic Reviews*. CD009778.
- Hall LH, Johnson J, Heyhoe J, et al. (2018) Exploring the impact of primary care physician burnout and wellbeing on patient care: A focus group study. *Journal of Patient Safety*, in press.
- Hall LH, Johnson J, Watt I, et al. (2016) Healthcare staff wellbeing, burnout, and patient safety: A systematic review. *PLoS ONE* 11: e0159015.
- Holden RJ, Scanlon MC, Patel NR, et al. (2011) A human factors framework and study of the effect of nursing workload on patient safety and employee quality of working life. *BMJ Quality & Safety* 20: 15–24.
- Hooper D, Coughlan J and Mullen M (2008) Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods* 6: 53–60.
- Houck NM and Colbert AM (2017) Patient safety and workplace bullying: An integrative review. *Journal of Nursing Care Quality* 32: 164–171.
- Johnson J, Louch G, Dunning A, et al. (2017) Burnout mediates the association between symptoms of depression and patient safety perceptions: A cross-sectional study in hospital nurses. *Journal of Advanced Nursing* 73: 1667–1680.
- Kline R and Lewis D (2018) The price of fear: estimating the financial cost of bullying and harassment to the NHS in England. *Public Money & Management* 39(3): 166–174.
- Kline R, Naqvi H, Razaq S, et al. (2017) NHS Workforce Race Equality Standard: 2016 Data Analysis Report for NHS Trusts.
- Laschinger HKS, Wong CA and Grau AL (2012) The influence of authentic leadership on newly graduated nurses' experiences of workplace bullying, burnout and retention outcomes: A cross-sectional study. *International Journal of Nursing Studies* 49: 1266–1276.
- Lindsey A, King E, McCausland T, et al. (2013) What we know and don't: Eradicating employment discrimination 50 years after the Civil Rights Act. *Industrial and Organizational Psychology* 6: 391–413.
- Little RJ (1988) A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association* 83: 1198–1202.
- Lloyd J (2010) *Ending ethnic discrimination in recruitment*. London, UK: The Strategic Society Centre.
- Louch G, O'Hara J, Gardner P, et al. (2016) The daily relationships between staffing, safety perceptions and personality in hospital nursing: A longitudinal on-line diary study. *International Journal of Nursing Studies* 59: 27–37.
- Louch G, O'Hara J, Gardner P, et al. (2017) A daily diary approach to the examination of chronic stress, daily hassles and safety perceptions in hospital nursing. *International Journal of Behavioral Medicine* 24: 946–956.
- McHugh ML (2009) The odds ratio: Calculation, usage, and interpretation. *Biochemia medica* 19: 120–126.
- Negin J, Rozea A, Cloyd B, et al. (2013) Foreign-born health workers in Australia: An analysis of census data. *Human Resources for Health* 11: 69–69.
- Osatuke K, Moore SC, Ward C, et al. (2009) Civility, Respect, Engagement in the Workforce (CREW) nationwide organization development intervention at Veterans Health Administration. *The Journal of Applied Behavioral Science* 45: 384–410.
- Panagioti M, Geraghty K, Johnson J, et al. (2018) Association between physician burnout and patient safety, professionalism and patient satisfaction: A systematic review and meta-analysis. *JAMA: Internal medicine* 178: 1317–1331.
- Panagioti M, Panagopoulou E, Bower P, et al. (2017) Controlled interventions to reduce burnout in physicians: A systematic review and meta-analysis. *JAMA Internal Medicine* 177: 195–205.
- Pitman P, Davis C, Shaffer F, et al. (2014) Perceptions of employment-based discrimination among newly arrived foreign-educated nurses. *AJN The American Journal of Nursing* 114: 26–35.
- Roche M, Diers D, Duffield C, et al. (2010) Violence toward nurses, the work environment, and patient outcomes. *Journal of Nursing Scholarship* 42: 13–22.
- Rosenstein AH and Naylor B (2012) Incidence and impact of physician and nurse disruptive behaviors in the emergency department. *The Journal of Emergency Medicine* 43: 139–148.
- Sellers KF, Millenbach L, Ward K, et al. (2012) The degree of horizontal violence in RNs practicing in New York State. *Journal of Nursing Administration* 42: 483–487.
- Sorra JS and Nieva VF (2004) *Hospital survey on patient safety culture (prepared by Westat, under Contract No. 290-96-0004; AHRQ Publication No. 04-0041)*. Rockville, MD: Agency for Healthcare Research and Quality.
- Stanley KM, Martin MM, Michel Y, et al. (2007) Examining lateral violence in the nursing workforce. *Issues in Mental Health Nursing* 28: 1247–1265.
- Tee S, Özçetin YSÜ and Russell-Westhead M (2016) Workplace violence experienced by nursing students: A UK survey. *Nurse Education Today* 41: 30–35.
- Volpone SD and Avery DR (2013) It's self defense: How perceived discrimination promotes employee withdrawal. *Journal of Occupational Health Psychology* 18: 430.
- West CP, Dyrbye LN, Erwin PJ, et al. (2016) Interventions to prevent and reduce physician burnout: A systematic review and meta-analysis. *The Lancet* 388: 2272–2281.
- World Health Organization (WHO) (2014) *Migration of Health Workers: WHO Code of Practice and the Global Economic Crisis*. Geneva, Switzerland: World Health Organization.
- Wolf EJ, Harrington KM, Clark SL, et al. (2013) Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement* 76: 913–934.

Judith Johnson is a Clinical Psychologist and Lecturer at the University of Leeds and Bradford Institute for Health Research. She completed her PhD in Psychology at the

University of Manchester in 2010 and her practitioner Clinical Psychology Doctorate at the University of Birmingham in 2013. She researches issues related to the healthcare workforce and has published on topics including burnout, patient safety, communication and staff training interventions. She is an expert in healthcare staff wellbeing; her research in this area has shown a consistent link between higher staff wellbeing and better patient care. She is now working to identify interventions that could be used to improve patient care by enhancing staff engagement.

Lorraine Cameron is was Head of Equality and Diversity at Bradford Teaching Hospitals NHS Foundation Trust. She completed her Master's in Disability Studies at the University of Leeds in 1999 and BA Hons in Sociology at the University of Liverpool in 1987. She has had 30 years' experience of working in this field within local government, regional government and health. She worked on interventions to improve the working lives of protected groups, recognising the clear link between good staff engagement and improved patient care. Her work on equality and diversity was recognised through winning a national award for representative workforce and being a finalist for most effective use of diversity to strengthen governance, recruitment or promotion.

Lucy Mitchinson is studying for a Master's of Research in Psychology at the University of Manchester. She previously graduated from the University of Leeds with a first-class honours degree in Psychology. In 2017 she worked as a Research Assistant at the Bradford Institute for Health Research, where she collaborated on projects relating to patient satisfaction, staff burnout and patient safety. Lucy has a keen interest in health research and her Master's work is focused on using qualitative research methods to understanding how health behaviour changes can be encouraged in the postnatal period. As an early-career researcher, Lucy has been learning and refining many advanced qualitative and quantitative analysis techniques and methodologies to aid her future research.

Mayur Parmar is Psychology graduate from the University of Leeds. He previously undertook a placement year at the Bradford Institute for Health Research as a Research and Implementation Assistant where he was involved with projects in the patient safety department. Following completion of his placement, he went on to finish his undergraduate degree in 2018. Since graduating, Mayur has been involved in a mental health project in Sri Lanka with the intention of providing relief and support in the National Institute for Mental Health. Currently, he works as a Support Worker in a residential care home for individuals with autism, learning disabilities and psychosis.

Gail Opio-te is a Specialist Community Public Health Nurse working with the Community Palliative Care Team at Bradford District Care Trust. She completed her Bachelor's of Science Nursing at Bradford University and her Public Health Post Graduate Diploma at Leeds Beckett University. Gail worked with the Yorkshire Quality and Safety Group and Improvement Academy between 2016 and 2018, becoming involved in several patient safety research investigations and improvement projects. As a community nurse, returned to front line practice, she is now bringing her experiences of research, improvement and patient safety into patients' own homes.

Gemma Louch is a Senior Research Fellow and Health Services Researcher at the Bradford Institute for Health Research, based at the NIHR Yorkshire and Humber Patient Safety Translational Research Centre. She graduated from the University of Leeds as a Bachelor of Science in Psychology in 2009, and a Master of Science in Psychological Approaches to Health in 2010. In 2014 Gemma was awarded a PhD from the University of Leeds. Gemma's thesis focussed on the relationships between the nursing work environment, job characteristics, individual characteristics and patient safety within hospital nursing. Her broad research interests include patient safety and health services improvement and the application of health psychology theory and principles to health services research. More specifically, Gemma has an interest in patient involvement in patient safety, the role of individual differences, the nursing work environment and patient safety and health professional behaviour change.

Angela Grange is a registered children's/general nurse with over 30 years' experience (paediatric nursing and research). Her PhD research developed a quality of life outcome measure for children following paediatric intensive care (2002). She has since worked as a research facilitator for nurses, midwives and Allied Health Professionals at City University, London to improve research capacity and capability in an acute London Trust. She has been Head of Nursing, Research and Innovation at Bradford Teaching Hospitals NHS Foundation Trust since 2006, where she provides strategic leadership for research in nursing and midwifery and leads a number of research and improvement projects within the trust, based at the Bradford Institute for Health Research. She is professional lead for clinical research nurses and leads the strategic development and implementation of innovations in healthcare in the trust.