

Workplace bullying and the association with suicidal ideation/thoughts and behaviour: a systematic review

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ABSTRACT

The established links between workplace bullying and poor mental health provide a prima facie reason to expect that workplace bullying increases the risk of suicidal ideation (thoughts) and behaviours. Until now, there has been no systematic summary of the available evidence. This systematic review summarises published studies reporting data on workplace bullying and suicidal ideation, or behaviour. The review sought to ascertain the nature of this association and highlight future research directions. 5 electronic databases were searched. 2 reviewers independently selected the articles for inclusion, and extracted information about study characteristics (sample, recruitment method, assessment and measures) and data reporting the association of workplace bullying with suicidal ideation and behaviour. 12 studies were included in the final review—8 reported estimates of a positive association between workplace bullying and suicidal ideation, and a further 4 provided descriptive information about the prevalence of suicidal ideation in targets of bullying. Only 1 non-representative cross-sectional study examined the association between workplace bullying and suicidal behaviour. The results show an absence of high-quality epidemiological studies (eg, prospective cohort studies, which controlled for workplace characteristics and baseline psychiatric morbidity). While the available literature (predominantly cross-sectional) suggests that there is a positive association between workplace bullying and suicidal ideation, the low quality of studies prevents ruling out alternative explanations. Further longitudinal, population-based research, adjusting for potential covariates (within and outside the workplace), is needed to determine the level of risk that workplace bullying independently contributes to suicidal ideation and behaviour.

INTRODUCTION

Bullying in the workplace is recognised as a serious issue, with major consequences for workers' mental health and lost productivity, with suicidal ideation (thoughts) and behaviour also canvassed as potential outcomes. Workplace bullying refers to a situation where a person receives repeated negative behaviour, mistreatment and/or abuse at work from others within the organisation.¹ Definitions of workplace bullying or 'mobbing' commonly assert that the exposure occurs over an extended period and is accompanied by a power imbalance (whether structural or social) between the instigators and targets.^{1–4} Targets of workplace bullying typically feel that they cannot easily stop the unwanted treatment. Another related concept is 'harassment', although this term is broader and less specific about

definitional aspects of the behaviour such as frequency and duration.⁵ Prevalence studies show that workplace bullying is common. A meta-analysis of prevalence found that 14.6% (CI 12.3% to 17.2%, K=70 studies) of workers had experienced workplace bullying (studies included predominantly assessed 6–12-month prevalence). However, this overall estimate should be interpreted with some caution as the meta-analysis predominantly represented studies from European countries, and also found that estimates of workplace bullying are significantly influenced by differences in measurement methods and sampling procedures.⁶ In Australia, data from the Australian Workplace Barometer (AWB) project showed that 6.8% of workers had experienced workplace bullying during a 6-month period.⁷ A recent population-based community study conducted in Australia found that 7.0% of respondents reported currently being bullied in the workplace, while 46.4% of respondents reported that they had been bullied at some point in their working life.⁸

The adverse financial and psychological consequences of workplace bullying are well established. There are substantial financial costs to employers resulting from increased absenteeism, presenteeism and staff turnover. Research has shown that workplace bullying is associated with greater sickness absence⁹ and decreased job satisfaction and job commitment.¹⁰ A recent meta-analytic review of longitudinal studies found that those who were exposed to workplace bullying had 68% greater odds of subsequent poor mental health compared with those who were not exposed to bullying. In addition, further research has shown that exposure to workplace bullying predicted mental health problems 5–7 years later.³ There is also research evidence which demonstrates that workplace bullying is strongly associated with poor mental health over and above the contribution of other common psychosocial workplace adversities.^{2 3 11}

While the links between workplace bullying and poor mental health have been clearly demonstrated by several high-quality longitudinal studies,^{11–13} and systematic reviews and meta-analyses,^{6 14 15} the impact of workplace bullying on suicidal ideation and behaviour remains relatively unexplored. The WHO reports that there are over 800 000 deaths per year due to suicide, and that suicide was the second leading cause of death among 15–29 years old globally in 2012. It also reports that suicide is a global phenomenon affecting all regions of the world and that in 2012, 75% of suicides occurred in low-income and middle-income

countries.¹⁶ Given the substantial prevalence of workplace bullying globally, and the demonstrated links with poor mental health, it is possible that workplace bullying is related to suicidal ideation and behaviour. In Australia, much of the discussion concerning the link between workplace bullying and suicide has been driven in the policy context, when the state of Victoria introduced antibullying legislation after media coverage of the suicide of a young woman severely bullied in her workplace. Brodie's Law started in June 2011 and made bullying a crime punishable by up to 10 years in jail.¹⁷

The notion of a link between exposure to workplace bullying and suicide is strengthened by conceptual theories describing the contexts in which suicide is likely to occur. For example, the interpersonal theory of suicide (IPTS) provides a conceptual pathway for how and why workplace bullying might lead to suicide.¹⁸ According to the theory, suicidal thoughts (or desires) are caused by two key, co-occurring proximal risk factors. The first is 'thwarted belongingness', which refers to feeling socially alienated from valued social circles. The second is 'perceived burdensomeness', which is the perception of being a burden on others with little hope of change.^{19–21} The IPTS model suggests that these two risk factors translate into suicidal behaviour in contexts where individuals no longer fear pain and injury (and have overcome the inherent drive for self-preservation) as a result of being repeatedly exposed to painful and distressing events. Empirical studies testing the model using population-based data show some support, particularly with regard to perceived burdensomeness as a risk factor.^{22–23}

If we apply the IPTS model to the context of workplace bullying, there are clear synergies, particularly in relation to persistent exposure to distressing events and social alienation. The model provides an initial starting point for identifying the mechanisms (ie, mediators and moderators) by which workplace bullying might lead to suicidal thoughts and behaviours—such as frequency and intensity of exposure, the alienating nature of (or type of) bullying behaviour, and the presence of external (non-workplace) social supports. In addition, Glasl theorised that highly charged, ongoing interpersonal workplace conflicts in particular may escalate to the point where one party experiences suicidal ideation and behaviour.²⁴ Largely on the basis of clinical experiences, Leymann²⁵ has also explored suicidal ideation and behaviour in the context of 'mobbing' and previously postulated that 10–15% of suicides in Sweden have a background where mobbing occurred. Leymann²⁵ has posited several consequences of bullying that match those thought to be a precursor of suicide in the IPTS model, including social isolation, desperation, hopelessness and despair; however, there appears to be little empirical research confirming these associations. Other research has linked workplace bullying with reduced self-esteem and increases in emotional exhaustion,^{26–27} suggesting that a 'resource loss spiral' might also be a useful framework for conceptualising how workplace bullying translates into suicidal ideation and behaviour.

While workplace bullying and suicide are major population and public health issues and there is a conceptual framework to support their association, there seems to be a paucity of empirical research testing the strength, direction and nature of this relationship. The current systematic review of the literature aimed to provide a clear, comprehensive summary of research reporting data on the relationship of workplace bullying with suicidal ideation and behaviour. The review aimed to highlight any methodological shortcomings in the available literature in order to provide direction for future research. This knowledge is needed to infer how reductions in workplace bullying might

flow on to reduce the prevalence of suicidal ideation and behaviour. The reporting of this systematic review follows the protocols outlined in the PRISMA guidelines (<http://www.prisma-statement.org/statement.htm>),²⁸ see online supplementary file 1).

METHODS

Search strategy

Five databases (PubMed, PsycINFO, Cochrane, SCOPUS and Web of Science (Core Collection)) were searched for relevant scientific articles published up until June 2016. Search terms included terms referring to work, bullying and suicide. Specific search terms were: (*work* OR employ**) AND (*bulli* or bully* or mobb* or harass**) AND (*suicid* or parasuicid**). The terms were searched within the title or abstracts of published articles (including all fields in PubMed and topic fields in Web of Science). The search was limited to peer-reviewed articles published in the English language, and to those reporting on human research. The initial search returned 337 articles. The database of articles was searched for duplicates, and 109 duplicate articles were excluded. Thus, 228 unique articles were identified.

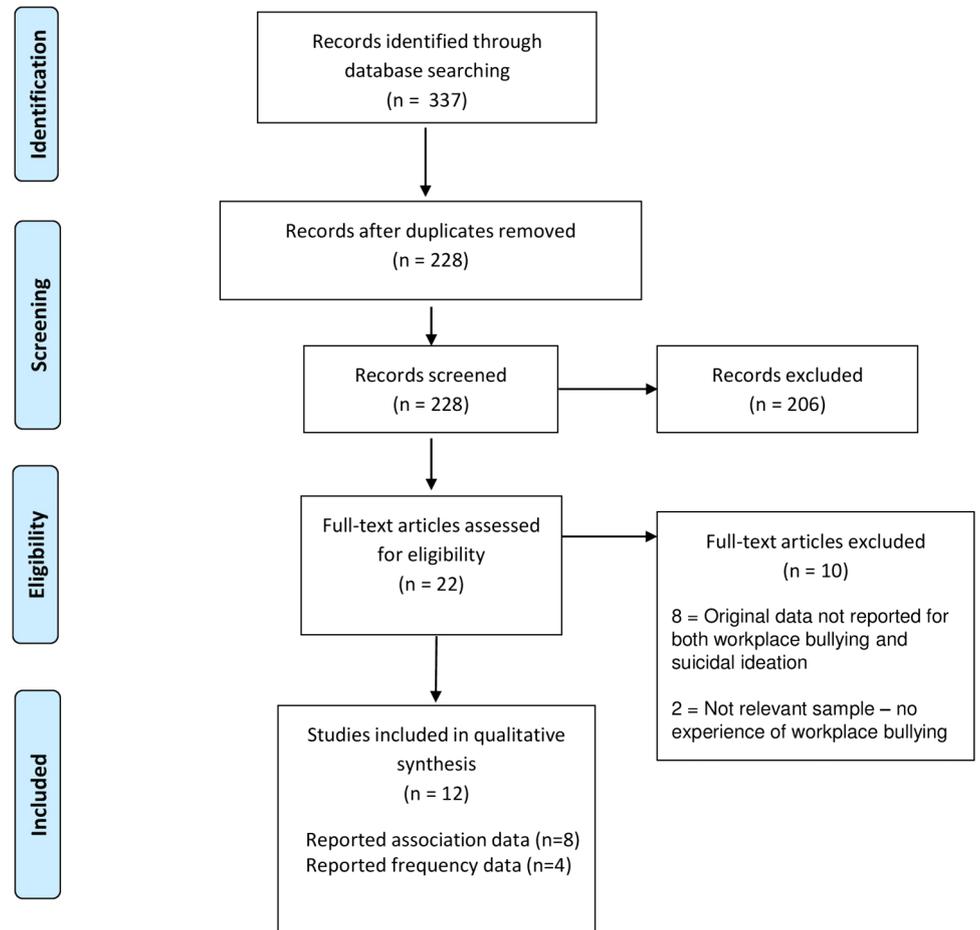
Study selection

The study selection process is described in the PRISMA flow diagram in figure 1. Two rounds of study selection were undertaken. First, two researchers independently screened the titles and abstracts for eligibility. Articles were excluded if they were clearly unrelated—not human research, or not related to the workplace, bullying/mobbing or suicide ideation/behaviours. At this stage, 206 articles were excluded, leaving 22 articles. In the second stage, the full texts of the remaining 22 articles were obtained and rated independently by two researchers. Articles were included if: (1) there was a reported measure of workplace bullying or similar construct (mobbing or harassment), and (2) there was a reported measure of suicidal ideation or behaviours. While the focus of the review was on articles reporting the 'association' between the two measures, articles were also included if they reported suicide prevalence in bullied populations. Overall, this allowance provided a more comprehensive picture of the relevant literature available, as although imperfect, these studies represent a major component of the existing literature and may still provide some insight into whether there are differences in the prevalence of suicidal thoughts and behaviours in targets of workplace bullying in comparison to the general population. Ten articles were excluded based on these criteria (see figure 1). The remaining 12 articles were identified as meeting the requirements to be included in the review. Hand-searching of the reference lists of these 12 articles was undertaken and no other relevant papers were identified.

Data extraction

Two researchers used a standardised coding sheet to extract the relevant data from the articles. The coding sheet was developed a priori and piloted on several studies before a final version was adopted. The data to be extracted included author names, publication date and location, sample size, age of sample (mean, SD), sample recruitment method (including response rate), bullying/mobbing assessment, suicidal ideation/behaviour assessment, estimate of association between bullying and suicidal ideation (eg, correlation (R), OR, Adjusted ORs (AOR)) and other relevant findings. Coding was undertaken independently. Any discrepancies between the coders were resolved through discussion to obtain a consensus. After the initial coding, studies were rated based on four criteria representing overall study quality.

Figure 1 Study selection and exclusion process (PRISMA flow diagram).



These criteria were: (1) there is an association (estimate) reported, (2) there is adjustment for sociodemographic covariates, (3) the sample is broadly representative (eg, random selection vs convenience) of the population of interest and (4) the study uses longitudinal data. The number of criteria achieved provides a proxy for study quality and methodological rigour. For example, samples that are not representative are more susceptible to skewed non-generalisable findings, and studies that do not adjust for relevant sociodemographic factors are vulnerable to endogeneity bias. Thus, the findings of those studies with fewer of the study quality indicators can be considered potentially less valid and reliable.

RESULTS

Study characteristics and quality

Tables 1 and 2 present information about the individual study characteristics in addition to data reporting on the association between workplace bullying and suicidal ideation, or behaviour. The review found that 12 studies met the criteria for inclusion in the review. Table 1 shows that 8 studies reported data on the association between workplace bullying and suicidal ideation. There was only one study by Lac *et al*²⁹ which reported the association specifically with suicidal behaviour (attempts). Table 2 shows a further four studies which reported data on the prevalence (or frequency) of workplace bullying and suicidal ideation, suggesting (but not specifically testing) an association. The final column in tables 1 and 2 shows the number of quality indicators present for each study. Only two studies by Nielsen *et al*^{18 30} fulfilled all four indicators of study quality. It should be noted, however, that even these studies only adjusted for

basic sociodemographic factors. Other unobserved confounding factors such as negative affectivity, financial hardship and poor job quality were unaccounted for, which may result in potentially biased findings.

Sample size and recruitment

The tables show sample sizes ranging from 48 to 1939. Out of the 12 studies, there were 3 large studies with samples of over 1000 participants.^{18 30 31} While several studies reported clear response rates, many others did not, as commonly they recruited convenience samples where the total population eligible to participate was unknown (marked in tables 1 and 2 as 'NR': not reported). The recruitment information indicates that only three studies—two by Nielsen *et al*^{18 30} and one by Milner *et al*³²—recruited from a general population of workers. The two Nielsen studies used data from the same sample (a nationwide representative sample of the Norwegian workforce), while Milner *et al*'s study recruited a nationally representative sample of working Australian adults. Several other studies recruited specific populations of workers such as ambulance personnel,³¹ nurses,^{33 34} and health professionals and engineers.³⁵ A final group of five studies, all based in Europe, solely included targets of workplace bullying (with no control group).^{29 36–39}

Measurement and assessment

Workplace bullying was measured using a variety of assessments. Three studies reported using the Leyman Inventory of Psychological Terror (LIPT) which assesses both duration and frequency of bullying.^{29 35 37} Two studies adopted the Negative Acts Questionnaire,^{30 36} and two others used checklists of

Table 1 Studies reporting an association between workplace bullying and SI, and behaviours

Author, year, country	Sample size and recruitment method	Age mean (SD) Female (%)	Workplace bullying measure	Suicide measure	Estimate of association	Findings	Quality indicators
Sterud <i>et al</i> (2008), Norway ³¹	1286 (RR 41%) ambulance personnel	36.8 (9.3) 23.2%	Single item, past 12 months, frequency (never to often)	Ideation—Paykel's Suicidal Feelings in the General Population (2 items used)	AOR lifetime ideation (1.0–2.7) p<.05; in past year ideation/thoughts AOR 1.5 (0.8–2.8, NS)	Bullying was significantly associated with lifetime, but not past year SI (postadjustment).	Association: ✓ Adjustment: ✓ ^a Representative: ✓ Longitudinal: ✓
Balducci <i>et al</i> (2009), Italy ³⁶	107 (RR NR), workers contacting mental health services about mobbing situation; perceived targets	42.7 (9.2) 44.9%	NAQ, past 6 months, frequency (never to daily)	Mixed ideation and behaviour—SPS, 6-item MMPI-2 'suicide risk scale' (summed score)	r=.30, p<0.01	Frequency of bullying in past 6 months was positively correlated with current SI/behaviour.	Association: ✓ Adjustment: × Representative: × Longitudinal: ×
Lac <i>et al</i> (2012), France ²⁹	69 (RR NR): 41 targets of workplace bullying referred to health clinic; 28 healthy control group	46.3 (8.5) 68%	Leymann Inventory of Psychological Terror, past 6 months, frequency (at least once a week)	Ideation and attempts—self-report items (details NR)	Bullied group with more ideation. (p<0.0001) Bullied group with more attempts. (p<0.05)	Bullied group: 66% ideation and 7% attempts. Control group: 0% ideation and 0% attempts	Association: ✓ Adjustment: × Representative: × Longitudinal: ×
Soares (2012), Canada ³⁵	Study 1 (S1): 613 (RR 32%) health professionals Study 2 (S2): 469 (RR 32%) engineers	40 (NR) 81% 44 (NR) 18%	Leymann Inventory of Psychological Terror. 4 groups of workplace bullying: never, current, past 12 months, witness	Ideation—single item from Beck Depression Inventory	Duration of bullying and SI; S1: r=0.13, p<0.001 S2: r=0.19, p<0.001 Frequency of bullying and SI S1: r=0.19, p<0.001 S2: r=0.20, p<0.001	'Bullied currently' or 'in the past 12 months' had significantly higher scores on SI than those 'never bullied'; Higher SI scores among those bullied by a superior or multiple people.	Association: ✓ Adjustment: × Representative: ✓ Longitudinal: ×
Romeo <i>et al</i> (2013), Italy ³⁹	48 (RR NR), targets of workplace bullying, longitudinal follow-up (T2) at 12 months or more (mean 22 months)	43.3 (NR) 65%	Self-report and clinician confirmed T2: single item: change in bullying situation	Mixed ideation and behaviour—SPS, 6-item MMPI-2 'suicide risk scale' (summed score)	(t(25)=3.34, p<0.01); (t(25)=1.23, NS)	Improvement in bullying associated with reduction in ideation/behaviour. No change in bullying associated with no change in SI/behaviour	Association: ✓ Adjustment: × Representative: × Longitudinal: ✓
Nielsen <i>et al</i> (2015), Norway ¹⁸	1846 (RR 57%), employees from national register, longitudinal follow-up at 2 and 5 years	44.3 (NR) 54%	Self-report single item, past 6 months, frequency (never to several times a week)	Ideation—self-report single item from Hopkins Symptoms Checklist, over past week and severity ('not at all' to 'extreme')	T1: Spearman r=0.12, p<0.001; T2 Spearman r=0.10, p<0.001; T3: Spearman r=0.09, p<0.001 AOR=2.05; CI=1.08, 3.89; p<0.05	Workplace bullying correlated with current SI and 2 or 5 years later. Bullied workers twice as likely to report SI at later time point.	Association: ✓ Adjustment: ✓ ^b Representative: ✓ Longitudinal: ✓
Nielsen <i>et al</i> (2016), Norway ³⁰	1939 (RR 57%) employees from national register, longitudinal follow-up at 2 and 5 years	46.5 (NR) 55%	NAQ (person-related, work-related, physical-related bullying). Past 6 months, frequency (never to daily)	Ideation—self-report single item from Hopkins Symptoms Checklist, over past week and severity ('not at all' to 'extreme')	T2: person-related AOR=.84. Work-related AOR=1.18. Physical intimidation AOR=10.68 (p<0.001). T3: person-related AOR=.93. Work-related AOR=.96. Physical intimidation AOR=6.41 (p<0.01)	Only physical intimidation predicted SI at T2 and T3, after adjusting for covariates.	Association: ✓ Adjustment: ✓ ^c Representative: ✓ Longitudinal: ✓
Milner <i>et al</i> (2016), Australia ³²	932 (RR 71%) employees, nationally representative sample	Median 35–44 45.2%	Self-report 6-item scale, frequency (never to daily)	Ideation—self-report 4 items (yes/no)	AOR=1.94, CI=1.50–2.50; p<0.001	Workplace bullying was significantly associated with SI (postadjustment)	Association: ✓ Adjustment: ✓ ^d Representative: ✓ Longitudinal: ×

Lac sample from same pool as Brousse (in table 2).

*Both Nielsen *et al*^{18 30} studies used the same sample. Covariates adjusted for: (a) gender, age, marital status, personality measure of susceptibility to paranoia (reality weakness); (b) gender, age, change in job or workplace; (c) age, gender, baseline SI, shared variance of the indicators of bullying behaviour (person-related, work-related, physically related bullying behaviours); (d) gender, age, occupational skill level, psychosocial job stressors (supervisor support, job control, job demands, job insecurity). AOR, adjusted OR; RR, response rate; NAQ, Negative Acts Questionnaire; NR, not reported; NS, not significant; R, correlation; SI, suicidal ideation; SPS, Suicidal Potential Scale; T, time; MMPI, Minnesota Multiphasic Personality Inventory.

Table 2 Studies reporting frequency of suicidal ideation in targets of workplace bullying

Author, year, country	Sample size and recruitment method	Age mean (SD) Female %	Workplace bullying measure	Suicide measure	Frequency of suicidal ideation in sample	Quality indicators
<i>All samples bullied</i>						
Brousse <i>et al</i> (2008), France ³⁷	48 (RR NR), targets of workplace bullying referred to health clinic, 12-month follow-up	44.9 (NR) 75%	Leymann Inventory of Psychological terror, past 6 months, frequency 'at least once a week'	Ideation—self-report questionnaire (details NR)	25% reported suicidal ideation at baseline and at 12-month follow-up	Association: × Adjustment: × Representative: × Longitudinal: ✓
Pompili <i>et al</i> (2008), Italy ³⁸	102 (RR NR), targets of workplace bullying referred to hospital	Male: 44.5 (8.2) Female: 47.2 (9.9) 46%	Referral as a target of workplace bullying	Mixed ideation and behaviour—SPS. 6-item	52% had some risk of suicide.	Association: × Adjustment: × Representative: × Longitudinal: ×
<i>Sample bullied and not bullied</i>						
Yildirim <i>et al</i> (2007), Turkey ³⁴	505 nurses (RR 71%)	30.6 (6.8) 100%	Mobbing behaviours list, past 12 months, frequency 'never to constantly'	Ideation—ways of escaping from mobbing list 'I think about committing suicide occasionally'	87% reported exposure to mobbing behaviours. 10% reported thinking about suicide to escape.	Association: × Adjustment: × Representative: ✓ Longitudinal: ×
Yildirim <i>et al</i> (2007), Turkey ³³	210 (RR 69%) academic nursing personnel	32.66 (9.7) 100%	Mobbing behaviours list, past 12 months, frequency 'never to constantly'	Ideation—ways of escaping from mobbing; 'I think about committing suicide sometimes'	91% reported exposure to mobbing behaviours. 9% reported thinking about suicide to escape.	Association: × Adjustment: × Representative: ✓ Longitudinal: ×

*Brousse sample from same pool as Lac (in table 1).
NR, not reported; RR, response rate; SPS, Suicidal Potential Scale.

mobbing behaviours.^{33 34} Most commonly, studies reported the findings from a general self-report measure of workplace bullying asking about experiences within a particular time frame (eg, current, 12 months, lifetime). *Suicidal ideation and behaviour* was measured in several studies using a single self-report measure,^{29 33 34 37} while one study combined four self-report items.³² Three studies used the Suicide Potential Scale which includes six items derived from the Minnesota Multiphasic Personality Inventory (MMPI) and explores suicidal ideation and behaviour.^{36 38 39} Three studies used single items taken from larger validated scales of psychopathology, that is, the Beck Depression Inventory and the Hopkins Symptoms Checklist.^{18 30 35} One study used a modified version of the five-item Paykel Suicidal Feelings in the General Population questionnaire.³¹

Association between workplace bullying and suicidal ideation and behaviour

Table 1 summarises the eight studies that reported data on the association between workplace bullying and suicidal ideation, or behaviour. All eight studies found a significant positive association between workplace bullying and suicidal ideation, and one study showed a positive association with suicidal behaviour.²⁹ Cross-sectional research by Sterud *et al*³¹ showed mixed findings, as the significant association between workplace bullying and past year suicidal ideation/thoughts was explained by adjusting for potential covariates (ie, gender, age, marital status, personality measure of susceptibility to paranoia). Three out of the seven studies reported simple, bivariate cross-sectional correlations or differences between groups.^{29 35 36} Cross-sectional research by Sterud *et al*³¹ reported multivariable models with ORs adjusted for other potential covariates (listed above). Cross-sectional research by Milner *et al*³² also reported multivariable models, importantly adjusting for a range of job quality indicators including supervisor support, job control, job demands and job insecurity, as well as occupational skill level, age and gender. Three studies used longitudinal data to examine the risks associated with workplace bullying on subsequent suicidal ideation. Romeo *et al*³⁹ followed up 48 targets of

workplace bullying for ~12 months and found that those who reported a reduction in bullying behaviour also reported a reduction in suicidal ideation/behaviour ($t(25)=3.34$, $p<0.01$). Nielsen *et al*¹⁸ examined the impacts of workplace bullying on suicidal ideation 2 and 5 years later adjusting for baseline suicidal ideation using a dual-process Latent Markov Model (LMM). The study found that bullied workers were twice as likely to report subsequent suicidal ideation (AOR=2.05 (1.08 to 3.89), $p<0.05$), after adjusting for age, gender and change of workplace. Nielsen *et al*³⁰ used the same sample, and found that after adjusting for sociodemographic factors (age and gender) and baseline suicidal ideation, exposure to physically intimidating bullying, but not person-related or work-related bullying, was a significant risk factor for suicidal ideation 2 and 5 years later (AOR=10.68 (4.13 to 27.58), $p<0.001$); AOR=6.41 (1.85 to 22.14), $p<0.001$).

Table 2 shows four additional studies which report data on the frequency of suicidal ideation in targets of workplace bullying. However, these studies do not provide information on whether there is any increased risk (or even an association) with suicidal ideation or behaviour. Two studies by Brousse *et al*³⁷ and Pompili *et al*³⁸ included samples where all individuals reported being bullied at work and had been referred to a health service for additional follow-up. The findings of both studies showed a high prevalence of suicidal ideation in the bullied samples—25% and 52% showed some level of suicide risk. These high prevalence rates are perhaps unsurprising, given that in these studies the impact on psychological distress was great enough for individuals to be referred to mental health services. Table 2 also reports on two studies of workplace bullying and suicidal ideation in a population of nurses.^{33 34} These studies show that a high percentage of the nurses experienced workplace bullying (86.5% and 91%) and that a considerable proportion of these nurses also reported medium levels of suicide risk (10% and 9%). While the prevalence rates provided for suicidal ideation and behaviour are substantial, the lack of prevalence data from a control group precludes drawing conclusions about whether rates are higher in nurses who had experienced workplace bullying than in nurses who had not.

DISCUSSION

Overall, the results show an absence of high-quality epidemiological studies investigating the relationship between workplace bullying and suicidal thoughts and behaviours (ie, prospective cohort studies that control for workplace characteristics and baseline psychiatric morbidity). While the review identified 12 studies that reported data on workplace bullying and *suicidal ideation*, only 8 of these studies reported actual estimates of the association, while the remaining 4 simply reported information about the prevalence of suicidal ideation in targets of workplace bullying. All eight studies that reported an association found evidence of a significant, positive relationship between workplace bullying and suicidal ideation. However, the lack of methodological rigour in many studies makes it difficult to conclude that the findings are accurate and free from bias. There was only one cross-sectional study by Lac *et al*²⁹ which reported the association specifically with *suicidal attempts*, demonstrating the lack of available evidence with regard to suicidal behaviour.

While the studies reviewed provide some evidence that experiences of workplace bullying are associated with suicidal ideation, much of the existing research is limited and tells us little about the strength, nature or direction of this association. There are two alternative explanations for the association between workplace bullying and suicidal features: (1) that individuals with poor mental health (or suicidal experiences) are more likely to be victimised (reverse causality or health selection) and (2) that other adverse characteristics of work (eg, a generally stressful work environment), associated with both perceived victimisation and suicidal thoughts and behaviours, explain the association. Two methodological characteristics missing from most of the studies reviewed are needed to exclude these alternative hypotheses: (1) the adjustment of potential covariates (within and outside the workplace) which may influence the association, and (2) longitudinal data which track changes in workplace bullying in association with changes in suicidal thoughts and behaviours. Cross-sectional research by Sterud *et al*³¹ adjusted for sociodemographic covariates (but not other workplace factors), and cross-section research by Milner *et al*³² adjusted for sociodemographic factors as well as a key job quality indicators. Romeo *et al*³⁹ tracked change in bullying experiences in association with change in suicidal ideation/behaviour over 12 months, but with no adjustment for covariates. The two most robust prospective studies available adjusted for demographic features, but though not other socioeconomic and work-related factors. Nielsen *et al*¹⁸ found that experiences of workplace bullying were independently associated with subsequent suicidal ideation over time, and also found no association between suicidal ideation and subsequent risk of being bullied (reverse causality). In addition, Nielsen *et al*³⁰ used the same sample and found that physically intimidating bullying behaviour was a significant risk factor for suicidal ideation 2 and 5 years later.

A further important consideration when examining the methodological rigour (and overall quality) of the papers included in the review is the representativeness of the samples recruited. What stands out most clearly is that only three studies^{18 30 32} used a randomly selected, population-based sample of workers, indicating that the findings can be generalised broadly to the population of workers. An additional four studies recruited from specific populations within an occupation group—in most cases health professionals.^{31 33–35} The remaining five studies used convenience samples, where individuals were referred to health clinics as a result of their experiences of workplace bullying and ill mental health. The samples from these five studies

are likely to provide biased findings, as those individuals referred to health services are disproportionately likely to include individuals who are experiencing significant mental health problems (either in relation to or not in relation to their workplace bullying experiences). Given that suicide is a major health issue internationally across varying demographics and social circumstances,⁴⁰ additional representative population-based research is needed to examine the risks associated with workplace bullying at the population level.

The studies reviewed provide few clues as to the contexts and mechanisms via which workplace bullying might lead to suicidal ideation and behaviour. The review highlights that workplace bullying is most often measured using a single-item assessment, which tells us little about the types of bullying that are most harmful. In the literature assessing the association between workplace bullying and ill mental health, there are two common approaches to assessing workplace bullying. The self-labelling approach involves presenting a general definition of bullying and asking respondents to report if they have ever experienced such behaviour in the workplace over a specific time frame.⁸ This type of item has been used to produce prevalence estimates of workplace bullying, and is the approach commonly taken by most studies. Alternatively, the behavioural or operational approach is more in depth and assesses the frequency of specific acts or behaviours providing more nuanced and multidimensional data.⁸ In the current review, only one study by Nielsen *et al*³⁰ reported findings using the behavioural approach, importantly distinguishing that exposure to physically intimidating bullying, but not person-related or work-related bullying, was a significant risk factor for subsequent suicidal ideation. There is also the issue of whether measures of workplace bullying capture (or indeed should aim to capture) bullying or abuse executed by persons outside the organisations such as customers, clients and patients, in order to investigate the impacts on mental health.⁴¹ Further nuanced research is necessary to better understand the specific workplace bullying behaviours which are most disabling. Similarly, in the course of conducting the review, we found no empirical research which tested the mechanisms via which (mediators) or for whom it is most likely (moderators) that workplace bullying leads to suicidal ideation. As discussed in the introduction to this review, previous theoretical research and the IPTS^{21 22 25 42 43} provide a useful starting point for investigating these mechanisms.

Limitations

One limitation of this review concerns the heterogeneity in study methodology in the studies reviewed. There are large differences in sample populations, recruitment methods, and assessments of workplace bullying and suicidal ideation, and behaviour. These variations restrict our ability to compare and combine the findings of individual studies, as findings in one particular population or using one particular measure are not necessarily transferable to findings using different populations and measures. However, conversely, the consistent positive correlations found between workplace bullying and suicidal ideation in a variety of samples, despite variation in recruitment and composition, might suggest that this association is universal and generalisable. Limitations regarding the workplace bullying measures have already been aforementioned, but similarly there is heterogeneity in the measures of suicidal ideation (eg, severity scales vs single self-report items, and prevalence time frames ranging from the past week to a lifetime) which impacts on the estimates obtained, and our ability to combine them in a

meaningful way. A related limitation concerns the difficulties of accurately measuring both workplace bullying and suicidal behaviour. The studies included all adopted self-report (and often single-item) measures. Given the shame and guilt that may accompany both workplace bullying and suicide, it is possible that the studies included underestimate both. On the other hand, there is also a risk that the present conclusions overestimate the strength of the association due to publication bias: that those analyses which find no association between workplace bullying and suicidal ideation are less likely to be published than those which do find an association.⁴⁴ There is also the possibility that the search terms used for suicide (suicid* or parasuicid*) did not completely capture all relevant studies. Suicidal ideation might have been assessed in broader studies focused on workplace bullying and depression (or psychiatric illness) with findings reported in the text, but not explicitly in the title or abstract. This review did not explore workplace bullying in association with completed suicide attempts, predominantly due to a lack of published research. While there are individual case studies which highlight instances where workplace bullying appears to have resulted in completed suicide,⁴⁵ this review focused on using quantitative research to determine the association. Finally, this review did not extend to examining other aspects of workplace bullying which may impact on suicidal ideation and behaviour—such as being a perpetrator or being accused of workplace bullying, both of which have been shown to be related to poor psychological health.⁴⁶

CONCLUSIONS

This systematic review is the first to provide a summary of studies reporting data on the association between workplace bullying and suicidal ideation and behaviour. There is some evidence that workplace bullying is associated with greater suicidal ideation; however, the vast majority of studies available are of low quality, increasing the risk of inconclusive or biased findings. Recent studies by Nielsen *et al*^{18 30} provide the most robust prospective evidence that workplace bullying, and in particular physical intimidation, leads to increases in subsequent suicidal ideation. The review found only one cross-sectional non-representative study reporting an association between workplace bullying and suicide attempts, meaning that no confident conclusions can be drawn regarding suicidal behaviour.

There is a need for further methodologically rigorous research to continue investigating the impact of workplace bullying on suicidal ideation and behaviour. Previous longitudinal research demonstrates the strong links between workplace bullying and poor mental health endure over time,^{14 15} and there is a strong link between poor mental health and suicide.⁴⁷ It appears that the relationship between workplace bullying and suicidal thoughts and behaviours is an important and somewhat overlooked piece of the puzzle. Providing further robust epidemiological evidence that workplace bullying leads to suicidal ideation and behaviour would back up anecdotal and clinical observations that describe extreme suicidal outcomes.^{4 25} This evidence would also provide data on which to quantify the impact at a population level—a powerful tool to potentially motivate the inclusion of regulations against bullying in work-related legislation and public health policies. It would inform discussion about the importance of providing support to targets of workplace bullying. While there is now a considerable (and growing) body of literature cementing workplace bullying as an important issue for employers as well as employment and health policy, there has been little progress, with only isolated exceptions, of the implementation of concrete regulatory and public

policy outcomes.⁴⁸ It may be that further evidence about the risks of workplace bullying in relation to subsequent suicidal thoughts and behaviour will provide additional impetus to motivate real change in work practices.

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