

The effects of bullying on healthcare workers: an umbrella review of systematic reviews and meta-analyses

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Summary. Objective. This umbrella review will provide a broad overview of the prevalence of vertical and horizontal bullying, the departments and the workers most affected by these attacks. **Methods.** We included systematic reviews and meta-analyses examining the effects of bullying on healthcare workers. Data extraction and analysis was performed on all included studies. The research strategy was undertaken in May 2021 and included three electronic databases (PubMed, Scopus and Web of Science): a total of 435 articles were retrieved from the Abstract and, once duplicates and irrelevant articles were removed, a total of 19 useful articles were reviewed. A comprehensive search was done to retrieve articles based on a PRISMA compliant protocol registered in PROSPERO: CRD 42021268082. **Results and discussion.** The general prevalence goes from 2 to 100%; for the individual healthcare workers, the highest prevalence is among nurses, 9-100%, followed by doctors 11.50-78.10%. Due to the heterogeneity of the studies, the other healthcare workers such as midwives, radiology technicians, administrative, employees were grouped and their prevalence goes from 3.30 to 100%. The results show that female nurses are significantly more likely to be abused than their male colleagues (women 3.60-100%; men 2.00-64.40%). The workplace in many studies was relevant for bullying: in particular, the most affected departments were emergency departments (2-100%) followed by intensive care units (17-84.80%). **Conclusions.** Bullying is extremely present among health workers and must be adequately countered. It will be necessary to carry out further studies to deepen the knowledge on this matter.

Key words. Bullying, effects of bullying, health status, mental health, nurses, workplace bullying.

Introduction

Bullying is a strategy, a repeated and continuous attack, at least once a week for at least six months, directed at workers by the employer, superiors or colleagues acting with persecutory purpose. Bullying behavior may increase over time and victims may be underestimated and become the target of negative and systematic social acts.

Currently, bad relationships between nurses are a

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Riassunto. Scopo. Questa review fornisce una panoramica della prevalenza del bullismo verticale e orizzontale dei dipartimenti e dei lavoratori più colpiti da questi attacchi. **Metodi.** Abbiamo incluso revisioni sistematiche e meta-analisi che esaminano gli effetti del bullismo sugli operatori sanitari. La ricerca bibliografica è iniziata a maggio 2021 e sono state utilizzate tre banche dati elettroniche (PubMed, Scopus e Web of Science): dall'abstract sono stati selezionati un totale di 435 articoli e, una volta rimossi i duplicati e gli articoli non pertinenti, sono stati selezionati un totale di 19 articoli utili. È stata effettuata una ricerca per recuperare articoli sulla base del protocollo PRISMA registrato in PROSPERO: CRD 42021268082. **Risultati e discussione.** La prevalenza generale del mobbing in ambito sanitario va dal 2 al 100%; per i singoli operatori sanitari, la prevalenza più alta è tra gli infermieri, 9-100%, seguiti dai medici, 11,50-78,10%. A causa dell'eterogeneità degli studi, gli altri operatori sanitari, quali ostetriche, tecnici di radiologia, amministrativi, impiegati, sono stati raggruppati, e la prevalenza di mobbing in queste categorie va dal 3,30 al 100%. I risultati mostrano che le infermiere hanno una probabilità significativamente maggiore di subire abusi rispetto ai loro colleghi maschi (donne 3,60-100%; uomini 2,00-64,40%). Il luogo di lavoro in molti studi è stato rilevante per il mobbing: in particolare, i reparti più colpiti sono stati quelli di emergenza (2-100%), seguiti dalle unità di terapia intensiva (17-84,80%). **Conclusioni.** Il mobbing è estremamente presente tra gli operatori sanitari e deve essere adeguatamente contrastato. Sarà necessario effettuare ulteriori studi per approfondire le conoscenze su questo argomento.

Parole chiave. Bullismo, effetti del bullismo, infermieri, mobbing, stato di salute, salute mentale.

well-recognized problem worldwide and reported in literature, also because this phenomenon can lead to negative consequences for the professional and private life of the victims^{1,2}.

Nurses who have been exposed to bullying have reported low job satisfaction. In fact, another common outcome of work-related bullying that was determined in most clusters was a decrease in nurses' work performance, which would lead to an increase in medical errors and poor patient outcomes. Similarly, exposure to bullying was associated with mental health problems

among nurses worldwide. Physiological problems have also been reported by most cultural groups³.

Several instruments have been developed to assess bullying. The Negative Acts Questionnaire-Revised (NAQ-R), developed by Einarsen, Hoel and Note-laers⁴, has been widely used for research on workplace harassment in foreign countries. Originally, this scale had 23 items, but the most recent English version (NAQ-R), contains 22 items. Cronbach's α calculated for the NAQ-R is 0.90, indicating excellent internal consistency. The NAQ-R measures workplace bullying in two ways: through the checklist of negative behaviors (divided into three categories, i.e. work, person and physical intimidation) and through a single question asking whether the respondent has been bullied and, if so, how often. According to the scale's working definition of bullying, all negative behaviors refer to ≥ 2 instances of bullying in the last 6 months. Prevalence is measured by self-reported frequency using a 5-point Likert scale (1= never, 2= occasionally, 3= monthly). Likert scale (1= never, 2= occasionally, 3= monthly, 4= weekly, 5= daily)⁵. As it is not a standardized instrument, not in all studies has this questionnaire been used as an instrument to measure the phenomenon⁶.

Bullying has been associated with disruption of the hypothalamic-pituitary-adrenocortical (HPA). The HPA is a complex set of endocrine interactions that elicit cortisol responses. Deregulation of the HPA axis has been associated with negative health consequences such as depression, anxiety, sleep disorders, burnout, obesity, diabetes and hypertension⁷.

In understanding the after-effects of workplace bullying, the Ursin and Eriksen⁸ Cognitive Activation Theory of Stress (CATS) and the Weiss and Cropanzano⁹ Affective Events Theory (AET) may be applied. According to the CATS, chronic activation from experiencing repeated negative interactions at work will lead to sustained high levels of stress, culminating in physical and psychosomatic disorders. At the same time, the AET proposes that the prolonged unhappy state one endures from experiencing workplace bullying influences job performance and satisfaction, eventually leading to burnout and job dissatisfaction. Concurrently, the high levels of stress and unpleasant state accompanying prolonged bullying may cause sleep disturbances, an inability to focus, and a loss of confidence and enthusiasm at work, leading to an increase in the rates of accidents and medical errors at the workplace. The negative repercussions described by studies included in this systematic review is disconcerting as they may affect learning and greatly compromise patients' health and safety¹⁰.

From a theoretical point of view, this is in line with the statement by Monteleone et al.¹¹ which examined the amount of cortisol produced in mobbed subjects. The statistical analysis showed that duration of bullying exposure was significantly associated with saliva cortisol AUC, explaining 76% of the variability in saliva cortisol concen-

trations. After removing this effect, harm avoid secretion. In conclusion, victims of mobbing are characterized by a reduced tonic activity of the HPA axis, which seems to be related to both the chronicity of being exposed to workplace bullying and increased levels of harm avoidance.

Uncivil and bullying behavior can lead to significant impacts and expenses for healthcare institutions. LaGuardia et al.⁶ states that an institution can be affected by an increase in employee quitting. It has been reported that 25% of victims and 20% of witnesses intended to resign due to uncivil behavior and bullying. The drop-out rate resulting from workplace bullying alone is 20%, adding to the severity of the current shortage of health workers.

The chronically hostile work environment created by the bullying situation, the fear of becoming the next target, and the inability to help the victim lead to chronic anxiety among those who witness bullying and lead to increased risk of developing type 2 diabetes, alcohol consumption and mental illness^{12,13}.

The bullying experienced by nurses and healthcare professionals will be perpetrated from four sources: managers, colleagues, subordinates and patients and their families. It is important to better understand the demographic characteristics of the workplace bullying targets because these characteristics could be visible signals of an individual's formal or informal power over others in their workplace¹⁴.

It is the responsibility of all health professionals to build and maintain a healthy working environment that enables them to provide ethical, effective and evidence-based care. More importantly, nurses need to have the courage to challenge prevailing ideologies and understand what they mean for their organizations, profession and practice.

The aim of this research is to systematically review the literature on general prevalence of the phenomenon and specifically on health workers, departments involved and gender sensitivity.

Materials and methods

A systematic review was conducted to evaluate the prevalence of bullying in healthcare workers. The review was recorded in PROSPERO, the international prospective register of systematic reviews, and the registration number is CRD 42021268082. In addition, the study was conducted according to the PRISMA (Preferred Reporting Items for Systematic review and Meta-analysis) guidelines.

SEARCH STRATEGY

Identification of studies relevant to this review was achieved by searching electronic databases of

published literature, including: PubMed, Scopus, Web of Science electronic databases. The following keywords were used: workplace bullying AND (health worker*); (bullying) AND (mental illness); workplace (bullying OR mobbing) AND (health worker*) AND review.

STUDY SELECTION

The review process was carried out using a multi-stage approach including: title and abstract screening and full text assessment. After title and abstract screening, full-text articles were assessed to determine whether they met the inclusion criteria. In the event that an included publication is not available as full text in English, the corresponding author was contacted to verify whether the eligibility criteria are met. If no response was received within 4 weeks, the article was excluded from consideration.

INCLUSION AND EXCLUSION CRITERIA

Only systematic reviews and meta-analyses including healthcare workers exposed to bullying were examined. No time limits were imposed.

DATA EXTRACTION AND QUALITY ASSESSMENT

Data extraction was conducted in duplicate by two independent reviewers, extracting data from all included studies. A data collection sheet was developed to confirm study relevance and to extract study characteristics. The following information was extracted from the studies: year of publication, study design, country, population characteristics, effects of exposure to incivility such as stress, burnout and chronic diseases. To ensure accurate data collection, data extracted were compared independently by each reviewer. Discrepancies and disagreements were discussed and resolved through a consensus session with a third party researcher. A quality assessment was carried out using AMSTAR1 for systematic reviews and meta-analyses.

Results

SEARCH RESULTS SUMMARY

The initial search across different electronic databases yielded 2962 citations. First, a total of 733 duplicate papers and 1794 papers not correlated to mobbing were excluded, accompanied by the removal of 225 publications from the title/abstracts screening. Among the 210 full-text articles screened, 191 were not included based on numerous factors, in particular a total of 19 full-text articles matching

the criteria for inclusion and exclusion were included (figure 1).

CHARACTERISTICS OF INCLUDED STUDIES

Our search strategy identified 19 studies conducted across 16 countries with most of the studies carried out in Italy (2), UK (2), USA (2), and Malaysia (2). The included studies used various tools such as questionnaire and interviews, in particular: in one study¹⁵ it was used the Practice Environment Scale of the Nursing Work Index (PES-NWI), in 3 studies¹⁶⁻¹⁸ it was used the Negative Acts Questionnaire (NAQ) and in 2 studies^{5,19} it was used the (NAQ-R). The general prevalence of bullying ranged from 2 to 100%, looking at individual healthcare workers it is noted that the highest prevalence is among nurses 9-100% followed by physicians 11.50-78.10%. The emergency department is the most affected by bullying with 2-100% of prevalence followed by intensive care units 17-84.80%. Prevalence estimates varied by region, with 26.38% in the European region, 23.61% in the Americas region, 20.71% in the African region, 17.07% in the Eastern Mediterranean region, 14.53% in the Western Pacific region, and 5.62% in the South-east Asia region.

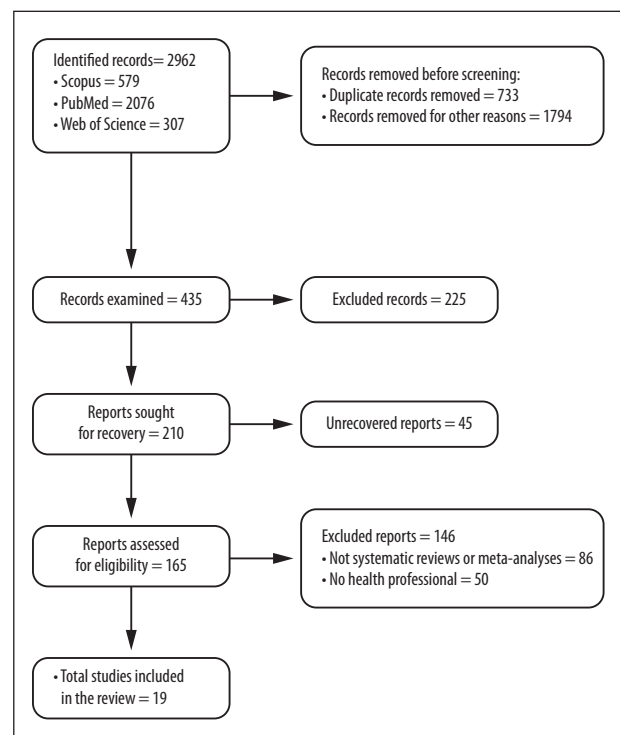


Figure 1. PRISMA Flow chart of the studies included in the umbrella review.

QUALITY OF STUDIES

The quality of each study was evaluated independently by two reviewers (SA, CC) with the Assessment of Multiple Systematic Reviews 1 (AMSTAR 1). This score consists of 11 items, each of which is categorized into a standardized set of four possible responses: “yes,” “no,” “can’t answer,” or “not applicable.” The items relate to a priori design, study selection and data extraction, the literature search, gray literature, the list of included and excluded studies, study characteristics, critical appraisal, formulation of conclusions, the combination of study results, publication bias, and conflicts of interest. The meager discrepancy in the judgment of studies between the two reviewers was addressed by mutual consensus and discussion with a third reviewer (GLT). The

mean of the total AMSTAR scores of each study was 6.71. The range is from 4.5 to 10.5. The general characteristics of the studies are shown in table 1²⁰⁻²⁷.

PREVALENCE OF WORKPLACE BULLYING

A total of 17 studies reported the aggregate prevalence of workplace bullying among nurses, physicians or other specialties; there were no time limits for the research. The aggregate prevalence (table 2) has a range from 2 to 100%: the lowest prevalence was found in the systematic reviews by Karatuna et al.³ and Halim et al.²⁶, the highest prevalence in the review by Njaka et al.²⁷. Table 1 shows that only bullying at work has been considered, this can be either vertical (doctor-nurse) or horizontal (nurse-nurse). The mean prevalence ranges from 10,75% to 68,16%. To calculate the

Table 1. Characteristics of the studies.

| Authors | Article type | Author's country | Participants | Types of participants | Amstar1 |
|--------------------------------------|-------------------------------------|------------------|--------------|---|---------|
| Bambi et al. ¹ | Review | Italy | 151307 | Nurses 5.9-90.4% | 5.5 |
| Karatuna et al. ³ | Review | Turkey | Unspecified | Physicians and nurses | 5.5 |
| Serafin et al. ⁵ | Systematic review and meta-analysis | Poland | 14341 | Nurses | 8.5 |
| Lever et al. ⁷ | Systematic review | UK | 82083 | Physicians, nurses and other | 7.5 |
| Samsudin et al. ¹⁰ | Systematic review | Malaysia | 9597 | Junior doctors | 6.5 |
| Boudrias et al. ¹² | Systematic review | Canada | 189443 | Healthcare workers | 4.5 |
| Hutchinson and Jackson ¹⁵ | Systematic review | Australia | 18528 | Nurses, technicians and students | 5.5 |
| Verkuil et al. ¹⁶ | Meta-analysis | Netherlands | 170233 | Healthcare workers | 8.5 |
| Giménez Lozano et al. ¹⁷ | Systematic review | Spain | 22993 | Nurses 71.64%, physicians 28.49% nursing assistants, orderlies and/or technicians, 1.16% | 6.5 |
| Feijó et al. ¹⁸ | Systematic review | Brasil | 97145 | Nurses 44%, physicians 31%, technicians 27-37% | 6.5 |
| Dassisti et al. ¹⁹ | Review | Italy | 22567 | Healthcare workers 11.4%-82.7% | 6.5 |
| Pompeii et al. ²⁰ | Systematic review | USA | 17820 | Nurses 9.5-62.1% and physicians 24.4-57.0% others (technicians, administrative staff) 3.3-71.4% | 6.5 |
| Keller et al. ²¹ | Systematic review | USA | 48904 | Physicians, nurses and other technicians | 6.5 |
| Gray et al. ²² | Review | Columbia | Unspecified | Healthcare workers in prevalence nurses | 5.5 |
| O'Donovan et al. ²³ | Systematic review | Ireland | 15311 | Physicians, nurses and technicians | 7.5 |
| Varghese et al. ²⁴ | Systematic review and meta-analysis | India | 42222 | Nurses 51.00-64%, physicians 21.5% to 73% radiographers 73% to 100% technicians 78.1% | 10.5 |
| Li et al. ²⁵ | Systematic review | China | 61800 | Nurses | 8.5 |
| Halim and Riding ²⁶ | Systematic review | UK | Unspecified | Physicians 11.5-53.8%, nurses 10.8-85.7%, students 25-57.2% | 5 |
| Njaka et al. ²⁷ | Systematic review | Malaysia | 8130 | Nurses (9-100), physicians (17.6-78.1), technicians (31.9-73) | 6 |

mean prevalence ranges we averaged the minimum and maximum values of workplace bullying for each of the study. For studies reporting only mean prevalence, this value was used in the calculation of both minimum and maximum mean prevalence. The same calculation was performed for the other sections.

PREVALENCE OF MOBBING IN HEALTHCARE WORKERS

The subgroup analysis of bullying was performed and summarized. The most affected health professionals are nurses with a prevalence range of 9 to 100% (table 3), physicians with a range of 11.50 to 78.10% (table 4), a third prevalence range was grouped among different specialties of health professionals such as obstetricians, radiology technicians and other technicians, these have a prevalence range of 3.30 to 100% (table 5).

SENSITIVITY ANALYSIS

The results show that the minimum prevalence for men is 2% and the maximum prevalence is 64,40%, while for women the minimum prevalence is 3.60% and the maximum prevalence is 100%. The main prevalence among men is between 11.24%-40.88%

Table 2. Prevalence of workplace bullying.

| Authors | Min % | Max % | Mean % |
|--------------------------------------|-------|--------|--------|
| Bambi et al. ¹ | 2,40 | 81,00 | |
| Karatuna et al. ³ | 2,00 | 47,00 | |
| Serafin et al. ⁵ | 17,00 | 94,00 | |
| Lever et al. ⁷ | 3,90 | 86,50 | |
| Samsudin et al. ¹⁰ | 30,00 | 95,00 | |
| Hutchinson and Jackson ¹⁵ | 13,00 | 67,00 | |
| Verkuil et al. ¹⁶ | 2,25 | 26,00 | |
| Giménez Lozano et al. ¹⁷ | 6,82 | 85,70 | |
| Feijó et al. ¹⁸ | 4,30 | 43,00 | |
| Dassisti at al. ¹⁹ | 3,60 | 69,00 | |
| Pompeii et al. ²⁰ | 9,50 | 74,60 | |
| Gray et al. ²² | | | 32,00 |
| O 'Donovan et al. ²³ | 7,00 | 73,50 | |
| Varghese et al. ²⁴ | 21,50 | 73,00 | |
| Li et al. ²⁵ | 16,49 | 22,53 | |
| Halim and Riding ²⁶ | 2,00 | 89,00 | |
| Njaka et al. ²⁷ | 9,00 | 100,00 | |

Table 3. Prevalence of mobbing in nurses.

| Authors | Nurses min % | Nurses max % | Mean % |
|-------------------------------------|--------------|--------------|--------|
| Bambi et al. ¹ | 5,90 | 90,40 | |
| Lever et al. ⁷ | | | 66,70 |
| Giménez Lozano et al. ¹⁷ | | | 71,64 |
| Feijó et al. ¹⁸ | | | 44 |
| Pompeii et al. ²⁰ | 9,50 | 62,10 | |
| Gray et al. ²² | | | 32 |
| Varghese et al. ²⁴ | 51 | 64 | |
| Li et al. ²⁵ | 17,11 | 22,53 | |
| Halim and Riding ²⁶ | 10,80 | 85,70 | |
| Njaka et al. ²⁷ | 9,00 | 100 | |

Table 4. Prevalence of mobbing in physicians.

| Authors | Physicians min % | Physicians max % | Mean % |
|-------------------------------------|------------------|------------------|--------|
| Lever et al. ⁷ | | | 22,20 |
| Giménez Lozano et al. ¹⁷ | | | 28,49 |
| Feijó et al. ¹⁸ | | | 31 |
| Pompeii et al. ²⁰ | 24,40 | 57,00 | |
| O'Donovan et al. ²³ | | | 19,33 |
| Varghese et al. ²⁴ | 21,50 | 73 | |
| Li et al. ²⁵ | 10,67 | 19,81 | |
| Halim and Riding ²⁶ | 11,50 | 53,80 | |
| Njaka et al. ²⁷ | 17,60 | 78,10 | |

Table 5. Prevalence of mobbing in other specialties.

| Authors | Other min % | Other max % | Mean % |
|-------------------------------------|-------------|-------------|--------|
| Lever et al. ⁷ | | | 4,11 |
| Samsudin et al. ¹⁰ | 30 | 95 | |
| Verkuil et al. ¹⁶ | | | 32 |
| Giménez Lozano et al. ¹⁷ | | | 1,16 |
| Feijó et al. ¹⁸ | 27 | 37 | |
| Dassisti et al. ¹⁹ | 11,40 | 82,70 | |
| Pompeii et al. ²⁰ | 3,30 | 71,40 | |
| Varghese et al. ²⁴ | 73 | 100 | |
| Halim and Riding ²⁶ | 25 | 57,20 | |
| Njaka et al. ²⁷ | 31,90 | 73 | |

(table 6), while the main prevalence among women is between 29 and 69.93% (table 7).

PREVALENCE OF MOBBING IN DEPARTMENTS

The main departments affected by this phenomenon are emergency departments, where the workload is higher and there is contact with working realities where mobbing can be considered a useful attitude in an emergency. Nurses and doctors working in emergency, trauma, intensive care and surgical wards in general are subject to greater exposure to impulsive behavior (table 8). In table 9 we can observe the prevalence in the various departments, in emergency departments such as emergency rooms we find a prevalence ranging from 2 in the study by Halim et al.²⁶ and Karatuna et al.³ to 100% in the study by Njaka et al.²⁷. The mean prevalence ranging from

Table 6. Sensitivity analysis - Males.

| Authors | Male min % | Male max % | Mean % |
|-------------------------------------|------------|------------|--------|
| Bambi et al. ¹ | 10,32 | 63 | |
| Giménez Lozano et al. ¹⁷ | | | 38,56 |
| Feijó et al. ¹⁸ | 4,30 | 21,84 | |
| Dassisti et al. ¹⁹ | 7,30 | 64,40 | |
| Pompeii et al. ²⁰ | 15,20 | 54,00 | |
| Varghese et al. ²⁴ | | | 12,00 |
| Li et al. ²⁵ | 2,00 | 23,69 | |
| Halim and Riding ²⁶ | 2,00 | 41,00 | |
| Njaka et al. ²⁷ | 20,80 | 59,20 | |

Table 7. Sensitivity analysis - Females.

| Authors | Females min % | Females max % | Mean % |
|-------------------------------------|---------------|---------------|--------|
| Bambi et al. ¹ | 27,30 | 84 | |
| Verkuil et al. ¹⁶ | 14,00 | 100 | |
| Giménez Lozano et al. ¹⁷ | | | 61,43 |
| Feijó et al. ¹⁸ | 6,90 | 43,00 | |
| Dassisti et al. ¹⁹ | 3,60 | 69,00 | |
| Pompeii et al. ²⁰ | 15,20 | 84,80 | |
| Varghese et al. ²⁴ | | | 88,00 |
| Li et al. ²⁵ | 6,72 | 10,46 | |
| Halim and Riding ²⁶ | 28,00 | 89,00 | |
| Njaka et al. ²⁷ | 39,00 | 79,20 | |

Table 8. Results concerning the Emergency departments.

| Authors | Min % | Max % | Mean % |
|-------------------------------------|-------|--------|--------|
| Bambi et al. ¹ | 8,10 | 79,10 | |
| Karatuna et al. ³ | 2,00 | 47,00 | |
| Lever et al. ⁷ | 3,90 | 86,50 | |
| Giménez Lozano et al. ¹⁷ | 29,22 | 85,70 | |
| Gray et al. ²² | | | 32,00 |
| O'Donovan et al. ²³ | 7,00 | 73,50 | |
| Varghese et al. ²⁴ | 45 | 73,00 | |
| Li et al. ²⁵ | 16,49 | 22,53 | |
| Halim and Riding ²⁶ | 2,00 | 89,00 | |
| Njaka et al. ²⁷ | 54,70 | 100,00 | |

Table 9. Results concerning other departments.

| Authors | Department | Min % | Max % | Mean % |
|-------------------------------------|-------------------------|-------|-------|--------|
| Bambi et al. ¹ | Operating room | 6,20 | 84,80 | |
| Bambi et al. ¹ | ICU | 21,00 | 84,80 | |
| Bambi et al. ¹ | Others | 13,40 | 40,00 | |
| Serafin et al. ⁵ | ICU | 17,00 | 53,00 | |
| Giménez Lozano et al. ¹⁷ | Mental Health specialty | | | 18,54 |
| Giménez Lozano et al. ¹⁷ | ICU | | | 40,63 |
| Gray et al. ²² | ICU | | | 32,00 |

Legend: ICU= intensive care Unit; Others= radiology/obstetrics/general departments.

20.04% to 72.92%. In intensive care units (ICU) (table 9) the prevalence range is from 17 to 84.80%.

Discussion

This systematic review investigated the prevalence among different healthcare workers showing that: the general prevalence ranged from 2 to 100%, looking at individual healthcare workers it is noted that the highest prevalence is among nurses 9-100% followed by physicians 11.50-78.10%, given the heterogeneity of the studies the other healthcare workers such as midwives, radiology technicians, administrative, employees were grouped and their prevalence is between 3.30-100%. The results show that women nurses are significantly more likely to be abused when compared to their male colleagues (women 3.60-

100% men 2.00-64.40%), however, men show signs of greater suffering in terms of mental and physical health than women¹⁹. The workplace in many studies has been described as relevant to the phenomenon of bullying, the departments most affected are emergency departments (2-100%) followed by intensive care units (17-84.80%). Prevalence estimates varied by healthcare facilities. The pooled one-year prevalence estimates in tertiary hospital, secondary hospital, primary care facilities, and nursing home were 22.48%, 18.83%, 6.51%, and 30.33%, respectively.

Prevalence estimates varied by region, with 26.38% in the European region, 23.61% in the Americas region, 20.71% in the African region, 17.07% in the Eastern Mediterranean region, 14.53% in the Western Pacific region, and 5.62% in the Southeast Asia region²⁵. Unlike lateral violence, the variability in prevalence recorded in studies on bullying is mainly linked to its operational definition, then to the areas studied and the instruments used to record this phenomenon¹.

The types of hostile behaviors reported ranged from isolating a colleague and refusing them assistance through to directly involving patients in the abuse. Importantly, hostile clinician behaviors experienced by nurses are widely recognized to include behaviors such as overt aggression and intimidation¹⁵. Vertical (physician-nurse) bullying was more commonly reported in the clusters with higher power distance scores. For example, in Eastern Europe and Southern Asia, superiors were determined as the main source of bullying. Likewise, in Latin America and the Middle East, vertical bullying was the most prevalent type of bullying and perpetrators were mostly the managers, head nurses or physicians. Horizontal bullying (nurse-nurse) In relatively lower power distance clusters such as Latin Europe and Confucian Asia, horizontal bullying was more commonly reported. Similarly, in half of the Anglo studies, the most commonly reported source of bullying was a colleague of the target³. Discrimination increases in cases where women also belong to ethnic minority classes because they experience double discrimination, related to ethnicity and gender. Research has shown that women's personal lives and their roles as wives and mothers are considered influential factors on being a worker. This conception would then lead to an increase in discriminatory behaviors and mobbing frameworks characterized by harassing actions. This conception would then lead to an increase in discriminatory behavior and mobbing characterized by harassment and discrimination on gender issues. Female workers are often attributed negative characteristics for any job, such as being unintelligent, easily subject to hormonal influence and overly emotional¹⁹.

As Al-Ghabees SH et al.²⁸ report, perpetrators of bullying usually display verbal or psychological bullying and only less frequently consist of physical abuse. Bullying includes obvious and hidden behaviors. Obvious behaviors associated with bullying

include shouting, insulting, pushing or physically overpowering someone. More complicated behaviors are relatively hidden. These include behaviors such as withholding information, gossiping, over-supervising work or assigning an irrational workload to supervisors. The ten most common forms of behavior among nurses are: non-verbal innuendo, verbal insults, threatening activities, withholding information, sabotage, infighting, gloating, backstabbing, disrespect for privacy and broken confidences²⁸.

Hostile behavior between nurses and clinicians extended to creating risks for patients, involving clinical care in acts of sabotage or retaliation between nurses. The types of behavior cited as a feature of this form of hostile clinician behavior included withholding or refusing to pass on relevant clinical information with the intention of making work difficult or putting an individual nurse under pressure or forcing clinical errors. Sometimes these acts occurred as a form of revenge for transgressing an 'accepted' norm by the team, or were directed towards nurses who had spoken out about their concerns about quality of care or practices. In three survey studies and two qualitative studies it was reported that nurse-to-nurse hostility resulted in individuals feeling overwhelmed, unable to ask for help, feeling out of their depth with patient situations, fear of making mistakes or causing harm, and inability to trust¹⁵.

COPING STRATEGIES AND LEADERSHIP STYLES

The term "happiness" as an indicator of positive mental health can refer both to moods and emotions as well as to more long-term wellbeing and life satisfaction. The Organization for Economic Co-operation and Development defines subjective wellbeing as encompassing three elements: life evaluation ("a reflective assessment on a person's life or some specific aspect of it"), affect (feelings or emotions, usually at a point in time), and eudemonia (sense of meaning and purpose, or "psychological flourishing"). As for measuring happiness and mental wellbeing, life satisfaction is seen as a more reliable measure of overall well-being as it depends more on the continuing circumstances of people's lives²².

Work stress was one of the most important occupational factors reported in empirical studies, and was always strongly and positively related to bullying. Organizational change, lack of procedural justice, and poor psychosocial safety climate were strongly and positively associated with bullying.

Leadership style was reported as an important risk factor. Passive laissez-faire leadership increased up to 4.3 times the risk of workplace bullying. Destructive, dictatorial, and autocratic leadership were also related to a higher occurrence of bullying. On the other hand, supportive leadership style, consideration of individuals by leaders, transformational and transactional leadership, authentic leadership, and fair leadership

reduced up to 70% the risk of bullying. Flexible work methods, role conflict, role ambiguity, personal conflicts, less satisfaction with working conditions, either monotonous or rotating tasks, high demands at work, pressure of work, and unclarity of duties were also positively associated with workplace bullying¹⁸.

Leaders who act with integrity promote a trusting environment which in turn impacts on safety culture seems an important one and requires further exploration. Complexity leadership considers the context in which leadership occurs, reflects the complex interactions between individuals and systems and focuses on cultivating system-level outcomes such as innovation, learning and creativity. This approach to leadership shifts our focus from an individual as the leader to recognizing that leadership is a system-level phenomenon. Within a complexity leadership approach, all members are encouraged to be leaders, and, as a result, leadership can occur within any interaction. This expands the potential for creativity, influence and positive change in an organization²³.

Just as Hamzaoglu et al.²⁹ it is very important for the managers in health institutions to be aware of this problem and to take appropriate and preventive measures for the employees when necessary, both in terms of occupational health and safety and the protection of the psychological and physical health of the employees. For this purpose, the first step to ensure that people can fight mobbing individually should be to increase their level of awareness on mobbing plus knowledge should be provided on how they can fight mobbing. Based on this, taking preventive and remedial measures in organizations regarding mobbing seems to be the most practical way. Establishing an organizational climate where people working in institutions mutually respect each other, informing employees in detail about mobbing through in service trainings, establishing units where they can submit their complaints when necessary, establishing and maintaining an open, transparent and effective communication network among employees, objectively evaluating and rewarding the success of employees.

The review suggests a buffering effect of reappraisal coping, confronted coping, practical coping, direct coping, active coping, social support (i.e. problem-focused coping strategies) and self-care (i.e. an emotion focused coping strategy) in the stressor-strain association, as well as a boosting effect of wishful thinking, emotional coping, avoidance, recreation, social support and suppression (i.e. emotion-focused coping strategies). From a theoretical point of view, these results fit well with the Michigan Stress Model, suggesting a moderating role of person-related factors in the association between work-related stressors and strain-related outcomes, the coping strategies (i.e. a person-related factor) play an important role in this association. While emotion-

focused coping strategies can be seen as an ineffective way of coping that may boost the stressor-strain relationship, problem-focused coping strategies can be seen as an effective way of coping buffering the stressor-strain association. More specifically, the first pathway of the Three Way Model further states that workplace bullying may result from the interaction between work-related stressors and the tendency to use inefficient coping strategies: handling stressors in an ineffective way raises the likelihood of becoming a target of bullying³⁰.

STRENGTH E LIMITATIONS

The quality of the systematic reviews and meta-analyses included in this study, compared to the average of studies similar to this one, is therefore moderate. Several aspects of bullying were taken into account, not only the general prevalence but also in a more specific way of individual healthcare workers, including gender of the workers, departments. The effects were also taken into account, giving useful results to the scientific literature. The estimated prevalence of bullying varied across geographic location, operational definition and workplace settings-emergency departments, psychiatric departments and general wards. However, as a result of meta-regression, it was noted that methodological quality is not influenced by the number of participants, the year of publication or the Nation of the first Author but the use of different methodologies for assessing prevalence may influence the data. Considering the high heterogeneity among studies, the overall prevalence estimate needs to be treated with caution.

Conclusions

As a result of the high prevalence found in this systematic review, information and education of all healthcare workers, including managers, is essential, considering the 100% peaks reached in some countries. The phenomenon should be examined by the company's prevention and protection services and included in the risk assessment document, as there are objective tools to assess its presence: one of them is the NAQ questionnaire that provides specific results. Moreover, it is necessary to look for methods to prevent its occurrence: training could be an excellent tool and should make all operators aware of the effects of their behavior.

Bullying can be considered an excellent predictor of both psychological and physical consequences for healthcare workers. Victimization due to workplace bullying can not only ruin their mental health, but also their career, social status and thus their lifestyle.

Overall, the research suggests that through training that implements coping and leadership strategies, the phenomenon can at least be mitigated.

Monitoring bullying is not only a preventive objective but also a moral obligation.

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References

- Bambi S, Foà C, De Felippis C, Lucchini A, Guazzini A, Raso L. Workplace incivility, lateral violence and bullying among nurses. A review about their prevalence and related factors. *Acta Biomed* 2018; 89: 51-79.
- Rodwell J, Demir D. Psychological consequences of bullying for hospital and aged care nurses. *Int Nurs Rev* 2021; 59: 539-46.
- Karatuna I, Jönsson S, Muhonen T. Workplace bullying in the nursing profession: a cross-cultural scoping review. *Int J Nurs* 2020; 111: 103628.
- Einarsen S, Hoel H, Notelaers G. Measuring exposure to bullying and harassment at work: validity, factor structure and psychometric properties of the Negative Acts Questionnaire-Revised. *Work & Stress* 2009; 23: 24-44.
- Serafin L, Sak-Dankosky N, Czarkowska-Pączek B. Bullying in nursing evaluated by the Negative Acts Questionnaire-Revised: a systematic review and meta-analysis. *J Adv Nurs* 2020; 76: 1320-33.
- LaGuardia M, Oelke ND. The impacts of organizational culture and neoliberal ideology on the continued existence of incivility and bullying in healthcare institutions: a discussion paper. *Int J Nurs Sci* 2021; 8: 361-6.
- Lever I, Dyball D, Greenberg N, Stevelink SAM. Health consequences of bullying in the healthcare workplace: a systematic review. *J Adv Nurs* 2019; 75: 3195-209.
- Ursin H, Eriksen HR. The cognitive activation theory of stress. *Psychoneuroendocrinology* 2004; 29: 567-92.
- Weiss HM, Cropanzano R. Affective Events Theory: a theoretical discussion of the structure, causes and consequences of affective experiences at work. In: Staw BM, Cummings LL (eds). *Research in organizational behavior: an annual series of analytical essays and critical reviews*. Vol. 18. Oxford, UK: Elsevier Science/JAI Press, 1996.
- Samsudin EZ, Isahak M, Rampal S. The prevalence, risk factors and outcomes of workplace bullying among junior doctors: a systematic review. *Eur J Work Organ Psychol* 2018; 27: 700-18.
- Monteleone P, Nolfi G, Serritella C, et al. Hypoactivity of the hypothalamo-pituitary-adrenal axis in victims of mobbing: role of the subjects' temperament and chronicity of the work-related psychological distress. *Psychother Psychosom* 2009; 78: 381-3.
- Boudrias V, Trépanier SG, Salin D. A systematic review of research on the longitudinal consequences of workplace bullying and the mechanisms involved. *Aggression and Violent Behavior* 2021; 56: 101508.
- Johnson SL. International perspectives on workplace bullying among nurses: a review. *Int Nurs Rev* 2009; 56: 34-40.
- De Cieri H, Sheehan C, Donohue R, Shea T, Cooper B. Workplace bullying: an examination of power and perpetrators. *Pers Rev* 2019; 48: 324-41.
- Hutchinson M, Jackson D. Hostile clinician behaviours in the nursing work environment and implications for patient care: a mixed-methods systematic review. *BMC Nurs* 2013; 12: 25.
- Verkuil B, Atasay S, Molendijk ML. Workplace bullying and mental health: a meta-analysis on cross-sectional and longitudinal data. *PLoS One* 2015; 10: e0135225.
- Giménez Lozano JM, Martínez Ramón JP, Morales Rodríguez FM. Doctors and nurses: a systematic review of the risk and protective factors in workplace violence and burnout. *Int J Environ Res Public Health* 2021; 18: 3280.
- Feijó FR, Gräf DD, Pearce N, Fassa AG. Risk factors for workplace bullying: a systematic review. *Int J Environ Res Public Health* 2019; 16: 1945.
- Dassisti L, Stufano A, Lovreglio P, Vimercati L, Loconsole P, Grattagliano I. Women and men, authors and victims of workplace bullying in Italy: a literature review. *Med Lav* 2020; 111: 463-77.
- Pompeii L, Benavides E, Pop O, et al. Workplace violence in outpatient physician clinics: a systematic review. *Int J Environ Res Public Health* 2020; 17: 6587.
- Keller S, Yule S, Zagarese V, et al. Predictors and triggers of incivility within healthcare teams: a systematic review of the literature. *BMJ Open* 2020; 10: e035471.
- Gray P, Senabe S, Naicker N, Kgalamono S, Yassi A, Spiegel JM. Workplace-based organizational interventions promoting mental health and happiness among healthcare workers: a realist review. *Int J Environ Res Public Health* 2019; 16:4396.
- O'Donovan R, Rogers L, Khurshid Z, et al. A systematic review exploring the impact of focal leader behaviours on health care team performance. *J Nurs Manag* 2021; 29: 1420-43.
- Varghese A, Joseph J, Vijay VR, et al. Prevalence and determinants of workplace violence among nurses in the South-East Asian and Western Pacific Regions: a systematic review and meta-analysis. *J Clin Nurs* 2022; 31: 798-819.
- Li YL, Li RQ, Qiu D, Xiao SY. Prevalence of workplace physical violence against health care professionals by patients and visitors: a systematic review and meta-analysis. *Int J Environ Res Public Health* 2020; 17: 299.
- Halim UA, Riding DM. Systematic review of the prevalence, impact and mitigating strategies for bullying, undermining behaviour and harassment in the surgical workplace. *Br J Surg* 2018; 105:1390-7.
- Njaka S, Edeogu OC, Oko CC, Goni MD, Nkadi N. Workplace violence (WPV) against healthcare workers in Africa: a systematic review. *Heliyon* 2020; 6: e04800.
- Al-Ghabeesh SH, Qattom H. Workplace bullying and its preventive measures and productivity among emergency department nurses. *BMC Health Serv Res* 2019; 19: 445.
- Hamzaoglu N, Yayak A, Turk B. Evaluation of mobbing perception levels of health employees. *Health Serv Manage Res* 2021; 35: 74-82.
- Van den Brande W, Baillien E, Vander Elst T, De Witte H, Van den Broeck A, Godderis L. Exposure to workplace bullying: the role of coping strategies in dealing with work stressors. *Biomed Res Int* 2017; 2017: 1019529.

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