TITLE

Determinants and consequences of workplace violence against hospital-based nurses: A rapid review and synthesis of international evidence

ABSTRACT

Workplace violence (WPV) against nurses is an international public health problem with likely detrimental consequences for individuals, systems, and societies. To effectively address WPV against nurses, its root-causes must be understood and its impact on nurse outcomes quantified. In line with PRISMA guidelines, we rapidly reviewed the international literature to identify determinants of WPV against hospital-based nurses and the impact of WPV on nurse outcomes. Twenty-one studies (22 articles) formed our final sample (16 quantitative, 3 qualitative, 2 mixed-methods). Supervisors, other nurses, and physicians were the major perpetrators of WPV against nurses. Precipitating factors originated from the nurse himself/herself, the workplace, other health professionals, the patient, and organisational management. WPV was linked to deficits of diverse magnitude in nurses' health, job satisfaction, and intention to stay. Evidence-based, zero-tolerance policies against WPV, preventative interventions, and appropriate disciplinary actions must be implemented at both organisational and national level to address WPV.

Keywords

Workplace violence; nurses; determinants; impact; hospital; outcomes; consequences

BACKGROUND

Nurses are three times more likely to experience workplace violence (WPV) compared to any other health professional group (WHO 2018). WPV against nurses refers to instances where nurses are assaulted or threatened physically, verbally, or psychologically in relation to their work, with an implicit or explicit challenge to their well-being (Gacki-Smith *et al.* 2009). Terms like bullying, incivility, hostility, or aggression have also been used to describe WPV (ILO/ICN/WHO/PSI 2002).

Converging evidence shows that every nurse, irrespective of rank or work experience, is at risk of WPV (Tee *et al.* 2016; CNF 2019). Although WPV against nurses takes place in all settings, hospitals are where most cases of WPV are recorded due to constant interactions with patients (Edward *et al.* 2014). Prevalence rates of WPV against nurses range from 50% to as high as 83% in various settings (Tee *et al.* 2016; Texas Center for Nursing Workforce Studies 2016; Zhang *et al.* 2017).

WPV against nurses has been identified as an international public health problem (CNF 2019). The International Council of Nurses (ICN) (2019) views WPV against nurses as a violation of nurses' basic human rights and an assault on the healthcare sector. WPV also is a major contributor to the deficit of about 9 million nurses globally (WHO 2016) due to nurses leaving the profession (A.N.A. 2015; ICN 2019). This poses significant financial burden on the healthcare sector (Kline and Lewis 2019), while countries affected by

shortages of nurses are unlikely to achieve Universal Health Coverage (ICN 2019).

The consequences of WPV against nurses can be detrimental and linked to poor patient outcomes (Tee *et al.* 2016) and nurse outcomes, including declining physical and/or mental health, low job-productivity (Najafi *et al.* 2018; Ope-babadele and Ilesanmi 2019) and loss of career or even life (Tee *et al.* 2016; Najafi *et al.* 2018). Thus, it is striking that WPV against nurses is consistently disregarded or inadequately tackled by organisations, governments, and the public (ICN 2019). To effectively address WPV against nurses, its root-causes must be fully understood and its impact on nurse outcomes quantified. This can lead to appropriate preventative actions taken and interventions implemented in the work environment (ILO/ICN/WHO/PSI 2002; Olsen *et al.* 2017). To our knowledge, no recent rigorous synthesis of evidence exists in this area. Thus, we rapidly reviewed and critically synthesised current, international evidence on determinants of WPV against hospital-based nurses and the impact of WPV on nurse outcomes. The results will serve as background information in designing proper policies to address WPV against nurses globally.

METHODS

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher *et al.* 2009) informed reporting of this review.

The PEO (Population-Exposure-Outcome) framework was used in formulating the review question (Bettany-Saltikov 2012):

- Population: Hospital-based nurses
- Exposure: Any type of WPV against nurses
- Outcomes: (a) Determinants of WPV; (b) Impact on nurse outcomes, including health, intention to leave, burnout, job satisfaction, nursing profession.

Therefore, our review question was: ***What are the determinants of WPV against hospital-based nurses and the impact of WPV on nurse outcomes?***

Search strategy

A rapid literature review was undertaken based on a systematic approach to identifying, appraising and synthesising relevant evidence (Stevens *et al.* 2018). A systematic search was done in PubMed and CINAHL using relevant Keywords and MeSH terms and combining them with Boolean operators (Supplementary file 1). The search was completed on March 4, 2020, updated on May 20, 2021, and included studies published between 2016-2021 to allow for a relevant/current evidence synthesis (Polit and Beck 2017). Limits were applied to the search-returns based on our pre-set eligibility criteria (Table 1).

Study selection and management

EndNote X9 was used to manage the retrieved records, remove duplicates, and screen for relevance based on title and abstract. All retained records were

accessed in full-text by both reviewers independently. Studies that met all eligibility criteria were included in the final sample.

Critical appraisal

The Critical Appraisal Framework for Original Research (CAFFOR), created by the second author for educational purposes and adapted from Aveyard and Sharp (2017), Moule (2015) and Polit and Beck (2017), was employed to assess the methodological quality of all included studies. The CAFFOR is divided into five sections to appraise the robustness of the methods, as well as the resulting worth to practice of the generated evidence (Supplementary file 2).

Data extraction

Data from the studies were extracted using a bespoke data extraction form in Microsoft Excel. This provided a consistent and transparent way to outline and synthesise the data (Bettany-Saltikov 2012). Extracted data included authors' name, study location, design, year, sample size, participant characteristics, exposure, and outcomes findings.

Data synthesis and analysis

Evidence from the included studies was synthesised using narrative evidence synthesis in line with the two target outcomes of our review question. Evidence was allocated to target outcome based on relevance, and sub-

grouped conceptually under each outcome to enhance presentation of diverse WPV determinants and impact on affected nurses.

RESULTS

In total, 163 articles were identified. A thorough screening process resulted in retaining 22 eligible articles that reported on 21 unique studies (Figure 1).

Overview of characteristics of the included studies

The split by quantitative, qualitative, and mixed methods employed in the 21 studies was 16, 3 and 2, respectively. The studies were conducted between 2016-2021 across Africa, Asia, Europe, North and South America, thus providing a good level of diversity in ethnic/cultural background. In total, 12,300 hospital-based nurses (both male and female) of different staff-levels and ages, in various clinical areas and with variable work experience participated in the studies. All studies used either self-reported questionnaires or interviews (or both) for data collection.

Appraisal of methodological quality

The studies had clear research problem(s), justified inclusion/exclusion criteria, and appropriate ethics. Major setbacks across studies were recall bias and low response rates, which collectively affect credibility of the evidence (Leavy 2017; Creswell and Creswell 2018).

Most studies employed random or purposive sampling methods or combinations of different sampling techniques, which enhance the representativeness of the samples (Leavy 2017; Creswell and Creswell 2018). Convenience, snowball or volunteer sampling was used in six studies, increasing the risk for social desirability/selection bias (Polit and Beck 2017).

All studies were cross-sectional and collected self-reported information. Observational and/or longitudinal designs could enhance measurement of determinants of WPV in the natural setting (Creswell and Creswell 2018) and assess outcomes over time (Leavy 2017). Most studies relied on well-validated questionnaires, which aided accurate measurement of WPV (Creswell and Creswell 2018). Appropriate data analysis was used in all studies. Evidence on researcher reflexivity and audit by participants/non-participants further enhanced credibility of qualitative findings (Leavy 2017).

Narrative evidence synthesis

Outcome 1: Determinants of WPV

Determinants of WPV were sub-grouped into 'perpetrators' and 'predisposing/influencing factors' of WPV.

Perpetrators of WPV

Supervisors, other nurses, and physicians were the major perpetrators of WPV against nurses as reported in most studies (Banda *et al.* 2016; Chang and Cho 2016; Myers *et al.* 2016; AL-Sagarat *et al.* 2018; Arnetz *et al.* 2019;

McPherson and Buxton 2019; Chaiwuth *et al.* 2020). Other perpetrators/instigators were patients (Banda *et al.* 2016; Chang and Cho 2016; Arnetz *et al.* 2019; Babiarczyk *et al.* 2020; Chaiwuth *et al.* 2020), patients' relatives (Banda *et al.* 2016; Chang and Cho 2016; Myers *et al.* 2016; Babiarczyk *et al.* 2020; Chaiwuth *et al.* 2020), politicians (Banda *et al.* 2016) and other healthcare workers (McPherson and Buxton 2019).

Predisposing/Influencing factors of WPV

(a) Factors related to the nurse

Nurses who were married (AL-Sagarat *et al.* 2018) or unmarried (Keller *et al.* 2018), younger (AL-Sagarat *et al.* 2018; Tsukamoto *et al.* 2019; Chaiwuth *et al.* 2020; Liaqat *et al.* 2021), and from minority ethnic and religious groups (Najafi *et al.* 2018) were more likely to experience WPV. Nurses who witnessed others' experience of WPV (Arnetz *et al.* 2019; Tsukamoto *et al.* 2019), nurses with lower level of resilience/poor stress management (Najafi *et al.* 2017; Sauer and McCoy 2017; Najafi *et al.* 2018) and nurses with negative affectivity (Keller *et al.* 2018) were also found at higher risk of WPV. Nursing practice errors (Chen *et al.* 2018), lower educational level (Liaqat *et al.* 2021) and fewer years of experience/clinical competence (Fang *et al.* 2016; Yokoyama *et al.* 2016; AL-Sagarat *et al.* 2018; Najafi *et al.* 2018; Chaiwuth *et al.* 2020) further increased the odds of WPV.

(b) Factors related to the workplace conditions

Working in large organisations, emergency departments, intensive care units (ICU) (Chang and Cho 2016; Fang *et al.* 2016), evening shifts (Keller *et al.* 2018; Tsukamoto *et al.* 2019), increased workload pressure (Yokoyama *et al.* 2016; Olsen *et al.* 2017; Najafi *et al.* 2018; Chaiwuth *et al.* 2020) and no security in physical surroundings (Chaiwuth *et al.* 2020) were associated with an increase in WPV against nurses.

(c) Factors related to other healthcare professionals

Co-worker disagreement, improper professional communication/behaviours, and transference of conflict between physicians and patients to nurses were reported as igniting WPV against nurses (Myers *et al.* 2016; Chen *et al.* 2018; Arnetz *et al.* 2019; McPherson and Buxton 2019; Tsukamoto *et al.* 2019).

(d) Factors related to the patient

Patient death, nurse-patient miscommunication, unstable physical/mental patient health status, low level of relative/patient satisfaction with care, unrealistic patient expectations, long waiting/treatment time, and high medical expenses (Chen *et al.* 2018; Najafi *et al.* 2018) were associated to WPV against nurses to different extents.

(e) Factors related to organisational management

Inefficient organisational management, refusal to address WPV against nurses, no procedure for reporting WPV, and WPV considered as a workplace culture were key organisational factors in this sub-group (Myers *et al.* 2016; Keller *et*

al. 2018; Najafi *et al.* 2018; Chaiwuth *et al.* 2020). Negative media information about nurses, poor public image of nurses, and nurses considered as scape goats of the health sector (Chen *et al.* 2018; Najafi *et al.* 2018) were also reported as enabling violent behaviour against nurses.

Evidence on determinants of WPV is of relatively good quality, mainly because of accurate measurement via use of standardised tools, which enhances construct validity (Creswell and Creswell 2018). The studies were conducted across different clinical settings, increasing the applicability of the evidence (Polit and Beck 2017). However, the self-reported nature of this evidence makes it prone to recall bias and to the possibility for overestimation or underestimation (Leavy 2017) due to the sensitive and upsetting nature of WPV.

Outcome 2: Impact of WPV on nurse outcomes

The impact of WPV on nurse outcomes seems to cut across several diverse areas:

Health

WPV against nurses was reported to negatively affect nurses' physical and mental health resulting in illness, hospital admissions, physical damage, posttraumatic stress symptoms, psychosocial impairment, reduced psychological safety, psychological disturbance, increased depression, and

suicidal thoughts (Banda *et al.* 2016; Berry *et al.* 2016; Myers *et al.* 2016; Choi and Lee 2017; Sauer and McCoy 2017; Arnetz *et al.* 2019; McPherson and Buxton 2019).

Burnout and job satisfaction

Chang and Cho (2016) and Choi and Lee (2017) reported that WPV against nurses results in increased burnout. Likely signs of burnout due to WPV include poor work performance (Banda *et al.* 2016; Olsen *et al.* 2017), fear of working (Banda *et al.* 2016; Myers *et al.* 2016; Najafi *et al.* 2018; McPherson and Buxton 2019), demoralisation (Banda *et al.* 2016), and stress and anxiety (Berry *et al.* 2016; Sauer and McCoy 2017; Malik *et al.* 2020). WPV was also associated with reduced job satisfaction (Chang and Cho 2016; Choi and Lee 2017; Olsen *et al.* 2017; Boafo 2018).

Attitudes towards the profession

WPV against nurses was reported to negatively affect the nursing profession, resulting in a destructive career, poor professional outlook/confidence, jeopardised professional standing (Myers *et al.* 2016; Najafi *et al.* 2018), decreased professional quality of life (Choi and Lee 2017), negative attitude towards nursing profession (Najafi *et al.* 2018) and embarrassment (Banda *et al.* 2016).

Intention to leave

Most nurses that experienced WPV considered quitting their job or even leaving the profession (Banda *et al.* 2016; Berry *et al.* 2016; Chang and Cho 2016; Choi and Lee 2017; AL-Sagarat *et al.* 2018; Arnetz *et al.* 2019; McPherson and Buxton 2019; Malik *et al.* 2020; Liaqat *et al.* 2021). Acts of resignation were often expressed as tardiness/lateness, increased work disengagement, reduced commitment to workplace, frequent change of departments/job tasks, and increased time off duty or on sick leave (Chang and Cho 2016; Choi and Lee 2017; Arnetz *et al.* 2019; McPherson and Buxton 2019).

This evidence is considered moderately reliable. It is based on a rich and diverse dataset, while high response rates and mixed-methods approaches enhance its credibility. However, the evidence itself was generated via self-reporting rather than taken from official records to ascertain objectivity/confirmability. Furthermore, the cross-sectional design employed

across studies does not allow for causality/directionality of relationships between predictors and outcomes to be confirmed (Polit and Beck 2017).

DISCUSSION

Evidence deriving from diverse settings, cultures, and research methodologies points to the direction of WPV being a complex phenomenon, having multiple perpetrators and predisposing/influencing factors and leading to multiple adverse outcomes for nurses. Based on this evidence, we have answered our review question to some extent. Bias and methodological limitations within and across studies (e.g., type of WPV, assessment measures, recall bias, and percentage of nurses affected) limit the ability to make firm conclusions.

The main perpetrators of WPV against nurses seem to be other nurses or healthcare professionals; this supports existing evidence (Edward *et al.* 2014; Nowrouzi-Kia *et al.* 2019). Edward *et al.* (2014) and Njaka *et al.* (2020) suggest that important correlates of WPV are socio-demographic factors, environmental/professional factors and collegial aggression which are in line with our findings. Nurses working night shifts being at increased risk of WPV could be attributed to lower staffing levels (inadequate security personnel inclusive) during night-time. The permissive attitude of hospitals and/or health care systems and organisations not meeting patients' expectations are recurring triggers of WPV in the literature (Ahmad *et al.* 2015; Elewa and El Banan 2019). Factors related to organisational management (inefficient/no

organisational management policies against WPV, acceptance of WPV as part of nurses' job description, not investigating a WPV case) may result in under-reporting of WPV and contribute majorly to poor recording of WPV (Edward *et al.* 2014; Ahmad *et al.* 2015).

WPV against nurses is also linked to several adverse effects for nurses, mainly related to health issues (illness, hospital admissions, posttraumatic stress symptoms, depression, suicidal thoughts) and minimised intention to stay (resignation, taking sick leave/off duty). This is consistent with the findings of Lanctôt and Guay (2014) and Njaka *et al.* (2020). Increased signs of burnout, reduced job satisfaction and poor professional outlook were also noted in the reviewed studies as impacts of WPV against nurses, congruent with past reviews (Lanctôt and Guay 2014; Ahmad *et al.* 2015; Nowrouzi-Kia *et al.* 2019; Njaka *et al.* 2020).

Review strengths and limitations

This rigorous rapid review provides an up-to-date, international perspective on the determinants and consequences of WPV against hospital-based nurses. While we were inclusive of studies from different ethnic/cultural backgrounds, selection of only English language publications might have excluded some studies. Our specific focus on hospital-based nurses means that our findings do not necessarily apply to nurses in other work settings.

Implications for practice

Strategies must be implemented that promote an organisational culture that fosters a safe and healthy work environment for nurses, prevent WPV, and supports victims of WPV (Elewa and El Banan 2019). Nurses must be encouraged to report incidents of WPV via comprehensive reporting mechanisms (Edward *et al.* 2014). Adequate security personnel must always be present in the hospitals (Ahmad *et al.* 2015). Staff exit interviews must be conducted to better understand nurses' reasons for leaving that may relate to WPV (Edward *et al.* 2014).

Implications for policy

Evidence-based, zero-tolerance policies against WPV and appropriate disciplinary actions must be implemented at both organisational and national level (Nowrouzi-Kia *et al.* 2019; Njaka *et al.* 2020).

Implications for education

In-service training must be offered to increase awareness about causes of WPV, its prevention measures, anger management and proper communication styles in the workplace for staff and if possible, patients also (Edward *et al.* 2014; Njaka *et al.* 2020). These initiatives must be incorporated in educational curriculums for nursing students. The public should also be sensitized about WPV (Ahmad *et al.* 2015).

Implications for research

More prospective and longitudinal research is warranted to better understand the short- and long-term impact of WPV against nurses (Lanctôt and Guay 2014; Polit and Beck 2017). A mixed methods approach could be considered to fully investigate WPV and allow for evidence triangulation (Creswell and Creswell 2018). The research must be carried out across various geographical settings, to improve generalisability of findings (Polit and Beck 2017; Njaka *et al.* 2020).

CONCLUSION

Determinants of WPV cut across different job roles, care recipients, and workplace conditions. Nurses with fewer years of experience and increased workload pressure, those who deal with transference of conflict to them, and poor care recipient satisfaction are at greater risk. WPV against nurses negatively impacts nurses' health, professional outlook, increases turnover rates, increases signs of burnout, reduces job satisfaction and productivity. Often, nurses do not report violent cases because of being insufficiently investigated, which perpetuates the problem and its consequences. This points to WPV becoming a priority for the international community with actions by all relevant stakeholders (e.g., governments, researchers, policymakers, educators, communities), with proper long-term and efficient solutions drawn up.

Key points

- Workplace violence (WPV) against nurses is a violation of nurses' basic human rights and an assault on the healthcare sector.
- Supervisors, other nurses, and physicians seem to be the major perpetrators of WPV against nurses.
- Triggers of WPV may originate from the nurse himself/herself, the workplace, other health professionals, the patient, and organisational management.

- WPV is linked to deficits of variable magnitude in nurses' health, job satisfaction, and intention to stay.
- The current evidence base consists of moderate-to-good quality evidence.
- Evidence-based, zero-tolerance policies against WPV, preventative interventions, and appropriate disciplinary actions must be implemented.

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Figure 1. PRISMA flow diagram of the record screening and selection process. Adapted from Moher et al. (2009).

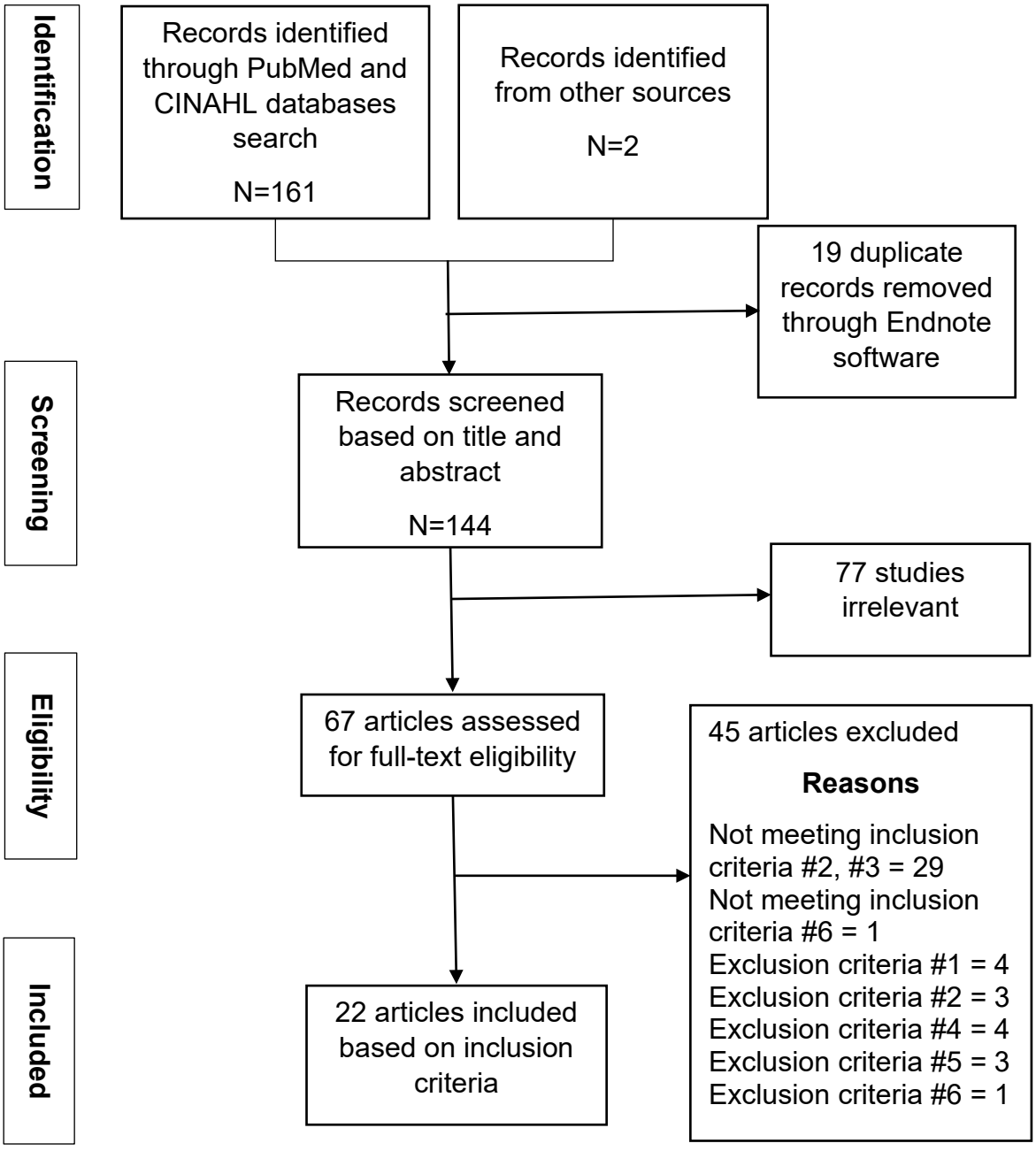

Table 1. Eligibility criteria for the selection of studies in the review.

Inclusion	**Exclusion**
1. Hospital nursing staff, registered nurses, staff nurses 2. Nurse outcomes following exposure to WPV, including health outcomes, intention to leave, burnout and job satisfaction 3. Determinants of WPV, including self-reported reasons or statistically tested variables/predictors of WPV 4. WPV self-reported and/or recorded incidents 5. Any country/culture 6. Original studies published between 2016 and 2021 7. Published in English	1. Studies exclusively on prevalence of WPV, type/source of WPV, nurses' coping strategies, or interventions to tackle WPV 2. Studies in one clinical setting/area only 3. Studies involving only student nurses 4. Studies with mixed samples of professionals (unless analyses/findings were reported separately for nurses) 5. Literature reviews, academic theses, commentaries, opinion papers, concept papers, no full-text records
Abbreviations: WPV - Workplace violence	

SUPPLEMENTARY FILE 1. Search Strategy

PUBMED:

1. "workplace violence" OR "Workplace bullying" OR "Work Place Violence" OR "Work-place Violence" OR "occupational violence" OR "Violent experience*" OR Bullying OR aggression OR "workplace abuse" OR "workplace threat"
2. "staff nurses" OR "registered nurses"
3. 1 AND 2

Filters: Publication date from 2016/01/01 to 2020/12/31; Humans; English (Re-run and Updated May 20, 2021).

CINAHL:

1. (MH "Staff Nurses") OR (MH "Registered Nurses")
2. (MH "Workplace Violence") OR (Workplace violence) OR (Workplace bullying) OR (Work Place Violence) OR (Work-place Violence) OR (occupational violence) OR (Bullying) OR (aggression) OR (workplace abuse) OR (workplace threat)

Limiters - Published Date: 20160101-20201231; English Language; Human, Expanders - Apply equivalent subjects, Search modes - Boolean/Phrase…

1 and 2 Apply equivalent subjects, Search modes - Boolean/Phrase (Re-run and Updated May 20, 2021).

SUPPLEMENTARY FILE 2. Critical Appraisal Framework for Original Research (CAFFOR) v.2