REVIEW ARTICLE

Review article: Staff perception of the emergency department working environment: Integrative review of the literature

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Abstract

Employees in EDs report increasing role overload because of critical staff shortages, budgetary cuts and increased patient numbers and acuity. Such overload could compromise staff satisfaction with their working environment. This integrative review identifies, synthesises and evaluates current research around staff perceptions of the working conditions in EDs. A systematic search of relevant databases, using MeSH descriptors ED/EDs, Emergency room/s, ER/s, or A&E coupled with (and) working environment, working condition/s, staff perception/s, as well as reference chaining was conducted. We identified 31 key studies that were evaluated using the mixed methods assessment tool (MMAT). These comprised 24 quantitative-descriptive studies, four mixed descriptive/comparative (non-randomised controlled trial) studies and three qualitative studies. Studies included varied widely in quality with MMAT scores ranging from 0% to 100%. A key finding was that perceptions of working environment varied across clinical staff and study location, but that high levels of autonomy and teamwork offset stress around high pressure and high volume workloads. The large range of tools used to assess staff perception of working environment limits the comparability of the studies. A dearth of intervention studies around enhancing working environments in EDs limits the capacity to recommend evidence-based interventions to improve staff morale.

Key words: ED, integrative review, staff perception, working condition, working environment.

Background

The health care environment can be a stressful place to work.1,2 This is an internationally recognised issue, with research being undertaken in Europe, Asia, North America, South America and Australasia.1,3–12 EDs are often cited as particularly stressful environments, with increasing numbers and acuity of ED presentations resulting in high pressure and high volume workloads.13 These factors, combined with varied staff skill-mix, burnout, difficulties with recruitment and retention, decreased morale and job satisfaction, personality factors, aggression and violence, interpersonal conflicts, limited recognition of quality work and disempowerment could all impact on staff and patients in terms of perception of environment, safety and risk of adverse events.14–19 Some of these factors relate to the health workforce overall, while some pertain more specifically to the ED.

Key findings

• ED staff are conscious of many stressors that impact on their working environment.
• The impact of working environment stressors is ameliorated by experience and autonomy.
• The perceptions of working environment stressors by ED staff appear to differ from other clinical staff.
• The multitude of tools used to assess working environment stressors make comparison difficult.
• Very few studies explore interventions to improve working environment in the ED.

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Accepted 18 October 2015

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Current literature suggests that ED staff are also subject to many external pressures around patient waiting times and the deleterious impacts of shift work.\textsuperscript{13,19,20} Despite this, emergency is often identified as a 'prestigious and high value' area of clinical work, which is known to enable development of high personal levels of clinical skills and the development of positive supportive team working environments.\textsuperscript{14,21,22}

The broad literature presents a contrasting view of EDs, as a clinical area fraught with stressors and also as an exciting and challenging environment. Synonymous with both these views, high levels of staff turn-over, clinician burn-out\textsuperscript{17,18} and post-traumatic stress disorder have been noted.\textsuperscript{18,23,24} These, almost dichotomous, views of EDs as both inspiring and demoralising working environments, both of which have been associated with development of burnout in ED staff,\textsuperscript{18} coupled with the increasing expectations of care delivery placed on EDs, provided impetus for a thorough and systematic evaluation of the literature regarding ED staff perception of their working environment, particularly of stressors in this space.

There has been relatively little research exploring stressors specific to the ED. Staff perceptions of their working environment and work-related stressors are complex areas that can encompass a range of concepts, including the physical environment and the underlying personality characteristics of co-workers.\textsuperscript{10,14,16,25} Our definition of working environment encompasses factors influencing the professional context in which ED clinical staff work. The outcomes of staff stress include sick leave,\textsuperscript{26} resignation and turn-over,\textsuperscript{16} the development of physiological alterations such as cortisol and blood pressure in staff;\textsuperscript{27} or the onset of mental health conditions such as burnout (listed in ICD10).\textsuperscript{18}

The aim of this integrative review is to identify, thematically group and critically evaluate published literature around ED staff members’ perceptions of working environment, with a particular focus on identification of the stressors within the ED and to establish areas of deficit in existing literature to focus future research.

The questions this review aimed to answer were the following:

1. How do ED staff perceive their working environment?
2. Do gender and/or clinical roles impact staff perceptions of the ED working environment?
3. Are staff perceptions of the ED working environment different to those of other specialist clinical areas?
4. What recommendations can be drawn from the literature to guide improvements in satisfaction with ED working environment?

**Methods**

A multi-stage process based on the model of Pluye and Hong\textsuperscript{28} was used for this integrative review.\textsuperscript{29,30} Because of the varied nature of the available evidence, the mixed methods assessment tool (MMAT)\textsuperscript{28,30} was utilised by four independent reviewers after the application of systematic inclusion and exclusion criteria.

**Search strategy**

The search strategy used is represented in Figure 1. Informing the search strategy were search terms: ED/EDs, Emergency room/s, ER/s, or A&E.
coupled with (and) working environment, working condition/s, and staff perception/s. The included dates were 1993–Jan 2015. Activation of ‘smart text’ and automatic word variation options during searches ensured that word combination options including US and UK spelling variations and plural terms were detected. Reference chaining was undertaken. All final searches were conducted in January 2015.

Inclusion/exclusion criteria

Studies were included if they were published in English between 1993 and 2015 and focused on staff perception of working environment. Literature was excluded if it covered ED staff perception of violence against staff,17 assessment of compassion fatigue and burnout,15,31 communication difficulties in ED,11,19,20,35 internal cultural diversity36 and staff undergoing training processes (e.g. specific ED clinical training),34 as these have already been explored in highly focused reviews (see Fig. 1).

One reviewer (AJ) screened titles and abstracts for inclusion based on criteria and retrieved 112 full-text articles that met all criteria. Review of full text articles and a final moderation process (AJ, JC, and MW) indicated that 31 met the inclusion and exclusion criteria.

Quality appraisal

The MMAT30 provides a structured approach for data abstraction and synthesis of themes from quantitative, qualitative and mixed method research in an unbiased manner.28 Three reviewers (AJ, LA and MW) independently evaluated the MMAT level of evidence for each article and completed an unbiased data extraction table.29

Results

Search strategies and study quality

The search resulted in 31 articles that comprised 24 quantitative-descriptive studies, four mixed descriptive/comparative (non-randomised controlled trial) studies and three qualitative studies in terms of the MMAT assessment. Studies were conducted in a range of countries (mostly Europe) and covered a range of clinical personnel (e.g. nurses, nursing assistants and doctors). The studies varied widely in quality (0–100% MMAT scores). Independent assessment of MMAT scores revealed some variability based around the research experience of the user; for this study, we reported the modal score. The studies were grouped into those exclusively exploring nursing staff (n = 12, Table 1), mixed clinical populations (n = 11, Table 2) and medical staff (n = 8, Table 3).

ED staff: unique population

Comparisons highlighted differences between ED staff and those working in other clinical areas, with ED staff consistently reporting higher levels of stress. However, the evidence also showed that, irrespective of the clinical population examined, ED staff self-identify as a unique population with higher autonomy, skill base, level of team work and communication,5,37,38 with such factors often ameliorating the impacts of stress.10,21,39

Studies focused on ED nurses frequently reported different demographic profiles than other nursing populations, with a greater proportion of male staff, with advanced qualifications and longer clinical experience. However, this was culturally specific. Studies conducted in Taiwan,3 China,40 Brazil11 and Iran2 included primarily female staff populations with limited qualifications.

Studies of ED nursing staff, which reported more balanced gender populations, tended to report better social support, and job satisfaction/work engagement,38,41,42 while those in less diverse populations (i.e. primarily women) reported fewer positive perceptions of many aspects of working environment.2,40 Thus, while there is cultural variability, clinical staff in EDs perceive their working environment in different ways to other groups of clinical staff. Their identified satisfaction with their work identity may protect them from some of the debilitating effects of stress in their working environment.

ED staff experience

There is a highly consistent positive relationship between ED experience and reduced or managed responses to ED stressors.3,41,43,44 Experience and work profile (part-time/full time), rather than role or chronological age, seem to play a large role in perception of work-related stress.4,45–47 Where staff demographic/stress relationships were explored, they were often coupled with high rates of staff turnover.13,41,43,48 This may lead to a self-selection process, with coping staff developing greater clinical competence, role identification and security. Non-coping staff often leave the ED. Reinforcing this self-selection concept are some findings suggesting that ED physicians attend more ongoing education and are less likely to move into the administrative hierarchy1 and that more senior ED medical staff report high work satisfaction than medical staff in other specialty areas.4,47 Role satisfaction may also be related to the higher remuneration and feelings of ‘reward’ and ‘value’ of more senior, experienced staff.3,45–47,49

Perception of workplace stress in ED clinical populations

Studies that included both medical and nursing staff noted that medical staff were more likely to report adverse psychological outcomes from their work stress,8,50 that is, stress outcomes, whereas nursing staff were more likely to report dissatisfaction from rapid doctor turnover46 and environmental factors such as parking.1,12 Perceptions of management practices, social supports, work autonomy and the impact of physical load differed between medical and nursing staff, with nursing staff reporting poorer management practices, greater social supports and also greater physical load.

Staff perception of ED work environment

While it was almost universally acknowledged that EDs are stressful places to work, staff perceptions of stressors varied. Some studies suggested that exposure to ED stressors was often unsustainable3,7,13 while others suggested that they are a critical and crucial part of the job.1,4 Five key stressors are identified in the succeeding text.
Table 1. Research evidence around ED nurses perceptions of their working environment

<table>
<thead>
<tr>
<th>Author, year, country</th>
<th>Aims</th>
<th>Sample</th>
<th>Research design/study type</th>
<th>Rigour, reliability, validity</th>
<th>Findings</th>
<th>Strengths</th>
<th>Limitations</th>
<th>Recommendations/implications</th>
<th>MMAT %</th>
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<tbody>
<tr>
<td>1. Hawley, 1992, Urban Canada</td>
<td>To identify and describe the intra-organisational sources of stress perceived by emergency nurses</td>
<td>ED nurses n = 68 from four EDs</td>
<td>Descriptive cross-sectional correlational design from a self-reported, previously validated, modified Stress Diagnostic Survey with 41 items each with a Likert-type scaling 1–7</td>
<td>Survey: Guided by the model for organisational stress research of Ivancevich and Matteson</td>
<td>Emergency nurses experience workload stress originating from a variety of sources including inadequate staffing and resources, too many non-nursing tasks, changing trends in ED use, patient transfer problems and also continued confrontation with patients and families who exhibited crisis or problematic behaviours</td>
<td>Study provides an interesting historical context – with limited identified impact of workload on staff stress</td>
<td>Limited information about participant selection, follow-up procedures or participation response rate</td>
<td>Required development of strategies dealing directly with stressors and the creation of a workplace that fosters more support and recognition of nurses and promotes professional growth may also help to reduce the stressors</td>
<td>25</td>
</tr>
<tr>
<td>2. Helps, 1997, UK</td>
<td>To assess psychological and physiological experiences of occupational stressors in ED staff</td>
<td>ED nurses n = 57 distributed across three grade levels</td>
<td>Mixed method study including semi-structured interview, cross-sectional a self-reported quantitative questionnaire</td>
<td>89% response rate</td>
<td>Top 10 identified ‘hassles’ were ambient temperature and Lighting, Too much to do, Budget cuts, Doctors, Erratic workload, Other nurses, People in charge, Time and work pressures, Lack of staff and interpersonal relationships were cited as the greatest sources of occupational stress</td>
<td>Use of multiple tools enabled a broad view of these nurses states – Broad process for inclusion of staff</td>
<td>t-test validity checks not cited</td>
<td>In general, A&amp;E nurses satisfied in their work, with overall levels of occupational stress akin to or lower than general nurses</td>
<td>25</td>
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<td>3. Adel-Seedi, 2002, Iran</td>
<td>To identify sources of stress for nurses working in ED</td>
<td>ED nurses – 120/160 selected at random – Qualifications from school diploma (24%) to Masters trained (4%) with the majority baccalaureate trained (68%)</td>
<td>Mixed methods</td>
<td>No significant correlation between stress, age, shift work or qualifications</td>
<td>No validated, non-validated, previously identified stressor items that participants were asked to rate using a 1–5 Likert scale</td>
<td>The most stressful demand on nurses was dealing with pain, suffering and grief and patient/ family responses</td>
<td>Relatively good mixtures of women (66%) and men (33%)</td>
<td>Requirement for improved support and working conditions for nurses including provision of counselling/debriefing and stress management training</td>
<td>25</td>
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<td>4. Ross-Adjie, Leslie and Gillman, 2007, Australia</td>
<td>To determine which stress-evoking incidents ED nurses perceive as the most significant, and whether demographic characteristics affect these perceptions</td>
<td>ED nurses n = 156/300</td>
<td>Mixed methods</td>
<td>In order of significance, stressors were the following: violence against staff, workload, skill mix, dealing with a mass casualty incident, the death/sexual assault stressor and number of years ED experience</td>
<td>Quasi data was enriched by free comment to contextualise findings</td>
<td>Quant data was enriched by free comments to contextualise findings</td>
<td>Debriefing after stress-evoking incidents in the workplace should be mandatory not optional, and should be conducted by professionals with specific debriefing and counselling skills</td>
<td>50</td>
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<td>5. Kilcarnoe and Dowling, 2007, Ireland</td>
<td>To identify themes from nurses' narratives around ED crowding</td>
<td>ED nurses</td>
<td>– Qualitative study using unstructured interviews from which data were extracted using an interpretive phenomenological approach</td>
<td>– Study participants were asked to confirm interpreted findings together with a peer validation process.</td>
<td>The primary themes that emerged around ED crowding were lack of space, lack of adequate equipment and 'shift work'.</td>
<td>Enables a free flow of lived experiences to be recorded – enriching the published record around areas of stress</td>
<td>– Enables a free flow of lived experiences to be recorded – enriching the published record around areas of stress</td>
<td>– Nurses perceived debriefing to be a useful part of maintaining a healthy WE</td>
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<td>6. Stathopoulou, Karanidou, Panagiotopoulou and Papathanassoglou, 2011, Greece</td>
<td>To document anxiety and stress levels in ED nurses</td>
<td>ED nurses and assistant nurses</td>
<td>– Qualitative descriptive design using cross-sectional correlation from a self-reported, validated quantitative questionnaire</td>
<td>– Validated scale providing quantitative parametric data</td>
<td>–75% of ED nurses noted a high level of anxiety that was higher in women than men and strongly positively correlated with duration of WE</td>
<td>– Enables a free flow of lived experiences to be recorded – enriching the published record around areas of stress</td>
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<td>7. Ghodamaladeh, Sharif and Rad, 2011, Iran</td>
<td>To establish the sources of job stress and the adopted coping strategies of nurses working in the ED</td>
<td>ED nurse volunteers</td>
<td>– Quantitative descriptive cross-sectional study using a self-reported questionnaire to identify the sources of job stress and nurse's profile, and Lazarus standard questionnaires to determine the types of coping strategies</td>
<td>– Total possible population not reported</td>
<td>– Frequent high level of stress noted with major stressors related to physical environment and lack of equipment, workload, managing patients and family, exposure to H&amp;S hazards, lack of support, and lack of physician attendance</td>
<td>– Enables a free flow of lived experiences to be recorded – enriching the published record around areas of stress</td>
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<td>8. Adriatensens, De Gucht, Van Der Doef and</td>
<td>To establish if job and organisational factors reported by ED nurses differ</td>
<td>ED nurses</td>
<td>– Comparative (non-RCT) descriptive cross-sectional correlational and comparative design using self-reported validated</td>
<td>– ED nurses reported more time pressure and physical demands, less decision authority and adequate work procedures, and fewer rewards than a – Multiple sites and broad study population</td>
<td>– Enables a free flow of lived experiences to be recorded – enriching the published record around areas of stress</td>
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<td>Maes, 2011, Belgium</td>
<td>from those of general hospital nurses and to describe what extent these characteristics can predict job satisfaction, turnover intention, work engagement, fatigue and distress</td>
<td>general hospital nurses in 2007–2008</td>
<td>carried out in 13 EDs of Belgian general hospitals</td>
<td>quantitative questionnaires including the Leiden Quality of Work Questionnaire for Nurses, the Checklist Individual Strength, the Utrecht Work Engagement Scale and the Brief Symptom Inventory – each with a 4-point Likert scale response</td>
<td>– Descriptive statistics (chi squared) and hierarchical regression analyses for each measure, via SPSS</td>
<td>previous study</td>
<td>general hospital nursing population</td>
<td>– ED nurses also recorded more opportunity for skill discretion and better social support by colleagues</td>
<td>population enhanced understanding of the study findings (i.e. ED nurses are demographically different to general hospital nurses) with more experience, males, qualifications, shift work and number of shifts worked per week</td>
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<td>Wu, Sun and Wang, 2012, China</td>
<td>To describe factors linked to occupational stress in ED nurses</td>
<td>ED nurses = 530 nurses, 16 hospital EDs – in Liaoning province</td>
<td>Quantitative descriptive cross-sectional correlational design from a self-reported quantitative questionnaire</td>
<td>– Chinese version of the Personal strain questionnaire + demographics = information about occupational roles (overload, insufficiency, ambiguity, boundaries, responsibilities) + personal resources (recruitment, self-care, social support and national coping)</td>
<td>One-way ANOVA Pearson correlation, general linear regression modelling</td>
<td>Validated scales providing quantitative ordinal (parametric) data on scale of 1–5</td>
<td>– Female ED nurses report greater work stress than reported in other occupational groups</td>
<td>– Included EDs with varying patient loads</td>
<td>– ER nurses compared with other speciality nurses and general nurses within the same hospital environments</td>
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<td>Chuang and Chung, 2012, Taiwan</td>
<td>To compare the levels of stress, depression, and intention to leave amongst ED nurses employed in different medical units in relation to their demographic characteristics</td>
<td>ED nurses = 29314 nurses from regional hospitals in the Northern area Taiwan – Nurses &gt;99% women</td>
<td>Quantitative descriptive cross-sectional correlational design from a self-reported quantitative questionnaire, including the context-specific adaptation of the Centre for Epidemiological Studies Depression Scale (CES-D), the Perceived Stress Scale, Intention to Leave Scale and general demographic information including hospital area of work</td>
<td>– Descriptive statistics, and Spearman's correlations for all study variables to identify possible factors for multiple regression modelling, ANOVA to identify clinical area differences</td>
<td>Used validated scales</td>
<td>Significant variations in reported stress levels in nurses, with ER nurses rating fairly low in the categories of nurses who were stressed, depressed and intending to leave</td>
<td>– Good comparison of ER nurses compared with other speciality nurses and general nurses within the same hospital environments</td>
<td>– ER is a relatively well supported WE for north Taiwanese district nurses compared with other clinical areas</td>
<td>– Increasing skills, autonomy, effective working procedure and quality supervision will positively impact on ED nurses</td>
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very high and cause asigni
No consideration of
High repeated
ED or hospital size orsetting
L a r g es a m p l es i z ef o r
bias results, recording
'survivors' – staff who
fth of nurses (~20%) had left
ED nursing positions over the 18-month study period with large
variance between sites (5–36%)
= 254 ED nurses
satisfaction, higher work engagement
from a previous study Adriaenssens,
Harassment and work agreements.
Senior nurses and
managers excluded
flx in nurse perception of working

\[ \chi^2 \] 
Comparative (non-RCT)
Scales
Descriptive statistics (chi squared)
with a 4-point Likert scale response

TABLE 1.

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| 11. Adriaenssens, De Gucht and Maes, 2013, Belgium | To report a previous study: to establish if job and organisational factors reported by ED nurses differ across time and to describe to what extent these characteristics continue to predict job satisfaction, turnover intention, work engagement, fatigue and distress in ED nurses. | ED nurses: n = 172/204 nurses still working from previous study, 2007–2008; where n = 254 was carried out in 15 EDs of Belgian general hospitals in 2009 | Comparative (non-RCT) descriptive cross-sectional and comparative design using self-reported validated quantitative questionnaires including the Leiden Quality of Work Questionnaire for Nurses, the Checklist Individual Strength, the Utrecht Work Engagement Scale and the Brief Symptom Inventory – each with a 4-point Likert scale response | - 83% response rate | - One-fifth of nurses (~20%) had left ED nursing positions over the 18-month study period with large variance between sites (5–36%)
- Gender differences included that female nurses reported higher job satisfaction, higher work engagement and lower emotional exhaustion
- Reported job demands remained high but stable over time, while social support and intentions to leave varied widely, as did control, predicted job satisfaction, work engagement and emotional exhaustion, reward, social harassment and work agreements. This suggests a rapid and significant flux in nurse perception of working conditions can occur | - High repeated response rate
- Large sample size for comparison | - No consideration of ED or hospital size or setting
- High turnover may bias results, recording exclusively from 'survivors' – staff who remained | - Staff turnover rates can be very high and cause a significant loss of staff capital
- Rapid (~18 months) changes in nurse reported work-related factors influencing stress provides many opportunities to positively impact on WE and staff satisfaction
- Frequent assessment of WE in ED is important, as it can change rapidly and impact staff retention |

2. Kogien and Cedaro, 2014, Brazil | To determine factors that may increase nurse-related work stress and decrease quality of life for ED nurses | ED nurses: n = 389 – Wide range of age, experience and average workloads | Quantitative descriptive cross-sectional study using a self-reported validated quantitative questionnaire: the Job stress scale, the WHOQOL-BREF and the job content questionnaire – Analysed using SPSSx and MS Excel – Pearson’s r test (or Fisher’s exact test, when necessary) for the categorical variables, and Student’s t-test was used for the continuous variables, then, multivariate analysis using logistic regression was performed and the odds ratios (OR) were obtained and adjusted for socio-demographic variables | - Low intellectual engagement, poor social support and high occupational demands are a passive work expectation and risk factors for concern in the physical domain of quality of life, altering mental/physical quality
- Psychological demands of ED environment are high – with staff exposed to pain, distress, helplessness, anxiety, fear, hopelessness, feelings of abandonment and loss
- Working conditions can be poor because of overcrowding, scarcity of resources, work overload and the fast pace of the work required of the professionals providing care | - Little research undertaken in South America and published in English
- Strong and comprehensive statistical analysis of quantitative and qualitative data | - Non-probabilistic and intentional
- Basin population (76% women; 81% nursing technicians)
- Sampling based on participant availability
- No follow-up of non-participation
- No information provided about response rate | - Increase social support for staff in EDs to reduce the negative consequences of stress on staff, promote well-being, provide a predisposition to good health and improve indicators of quality of life |

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- Helps to support an international conceptualisation of the work stressors in EDs | - Low intellectual engagement, poor social support and high occupational demands are a passive work expectation and risk factors for concern in the physical domain of quality of life, altering mental/physical quality
- Psychological demands of ED environment are high – with staff exposed to pain, distress, helplessness, anxiety, fear, hopelessness, feelings of abandonment and loss
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Note: all survey completion was deidentified and voluntary, with appropriate accompanying ethical approval unless noted otherwise. ED data type (quantitative/qualitative) is identified in the study and/or on the basis of the analysis performed. MMAT classification system.
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<th>Strengths</th>
<th>Limitations</th>
<th>Recommendations/ implications</th>
<th>MMAT %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Joe, Kennedy and Bensberg, 2002, Australia</td>
<td>To demonstrate a comprehensive workplace health survey that is able to identify indicators that contribute to staff workplace well-being</td>
<td>$n = 32,450$ staff from seven Melbourne suburban public hospital EDs with similar attendance numbers, case mix and demographic profile $n = 59$ doctors, $n = 198$ nurses, $n = 30$ clerical/admin staff and $n = 22$ other staff</td>
<td>Quantitative descriptive study using a cross-sectional correlational design from a self-reported validated employee survey conducted by Service Management Australia (a subsidiary of Markle/Inc) with terminology within the survey tailored to make it relevant to the ED</td>
<td>- 64% response rate</td>
<td>- Staff rated a safe environment, professional standards, and staff morale the most important factors for workplace health. They were most satisfied with the flexibility of work arrangements (86%) and leadership (80%), and least satisfied with the performance management of staff (69%) and job satisfaction and morale (67%)</td>
<td>- Utilised widely used mixed method survey tools across a range of sites</td>
<td>- No follow-up of non-respondents to the survey</td>
<td>- Provides direction for further research into ED workplace health, enabling refinement of indicators reflecting various aspects of workplace health, and correlation of indicators with sickness, stress and injury</td>
<td>100</td>
</tr>
<tr>
<td>2. McFarlane, Duff and Bailey, 2004, Jamaica, West Indies</td>
<td>To explore factors associated with occupational stress in ED staff and the coping strategies used</td>
<td>28/33 health personnel working in the A&amp;E $n = 13$ doctors, $n = 8$ registered nurses and $n = 5$ enrolled assistant nurses</td>
<td>Quantitative descriptive cross-sectional design using two self-reported, trialled, quantitative and open-ended questionnaire items that included limited demographic information</td>
<td>- Response rate = 85%, 54%</td>
<td>- A DE was reported to be stressful, with the major sources of stress reported as the external environment and the amount and quality of the workload and response to emotional, physical and behavioural symptoms</td>
<td>- Little published information from West Indian hospitals</td>
<td>- No evidence of ethical approval</td>
<td>- Increased monetary compensation, more staff and positive feedback from managers as factors that may alleviate work stress</td>
<td>25</td>
</tr>
<tr>
<td>3. Escribano-Argües and Pérez-Hoyos, 2007, Spain</td>
<td>To determine if psychological WE differentially altered psychological well-being for ED clinical staff</td>
<td>SEM members including ED doctors and nurses $n = 369$, data collected from $n = 278$ nurses and $n = 368$ doctors</td>
<td>Quantitative descriptive study using a cross-sectional correlational design from a self-reported validated quantitative questionnaire</td>
<td>- Supported by Kuran and Theunis's demand-control WE model</td>
<td>- Psychological WE factors strongly influenced clinical staff psychological well-being, but the effect varied in nurses and doctors</td>
<td>- Little published information available</td>
<td>- Abstracly available</td>
<td>- Increased monetary compensation, more staff and positive feedback from managers as factors that may alleviate work stress</td>
<td>25</td>
</tr>
<tr>
<td>4. Magid, Sullivan, Clancy et al., 2009, USA</td>
<td>To assess the degree to which ED staff feel that EDs are designed</td>
<td>3,682 from 69 sites</td>
<td>Quantitative descriptive cross-sectional design using a self-reported, extensively validated instrument</td>
<td>- Response rate = 85%</td>
<td>- The developed scale generally had good reliability</td>
<td>- Survey respondents commonly reported problems in four systems critical to ED safety: physical</td>
<td>- Multiple step survey development,</td>
<td>- No follow-up of non-respondents to the survey</td>
<td>- Greater need for capacity of control for doctors in EDs</td>
</tr>
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TABLE 2. (Continued)

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<tr>
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<tbody>
<tr>
<td>Healy and Tyrrell, 2011, Ireland</td>
<td>To examine nurses’ and doctors’ attitudes to, and experiences of, workplace stress in three EDs</td>
<td>n = 103/150 (n = 90 nurses and n = 13 doctors from three EDs)</td>
<td>Descriptive cross-sectional design from a self-reported 16 item survey with a mixture of yes/no, Likert-type (quantitative) item response and open-ended questions and some additional experience and demographic data</td>
<td>Cronbach’sα: physical environment (0.60), staffing (0.65), equipment and supplies (0.93), nursing (0.93), teamwork (0.60), culture (0.79), image and monitoring (0.91), information coordination and consultation (0.64), and imprint coordination (0.88)</td>
<td>Generally, factors around working environment, including ‘blame’ culture, staff supervision, cross-discipline teamwork, were rated very highly.</td>
<td>Validation, piloting and testing establishing face and construct validity</td>
<td>- Pilot at 10 EDs and then administered to 65 different EDs across the USA</td>
<td>Emergency care are necessary to maximise patient safety in US EDs</td>
<td>80</td>
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</tbody>
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### TABLE 2. (Continued)

<table>
<thead>
<tr>
<th>Author, year, country</th>
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<tbody>
<tr>
<td>6. Flowerdew, Brown, Russ, Vincent and Woloshynowych, 2012, London, UK</td>
<td>To identify key stressors for ED staff, explore positive and negative behaviours associated with working under pressure and consider interventions that may improve ED team functions</td>
<td>Purposive sampling recruitment of medical and nursing staff of varying seniority</td>
<td>Semi-structured interviews were recorded and anonymously transcribed and analysed to extract broad themes from the interviews, and responses were coded using the NVivo computer programme</td>
<td>Themes we re independently confirmed by a second researcher</td>
<td>Identified stressors included the '4 h' targets, excess workload, staff shortages and lack of teamwork, both within the ED and with inpatient staff</td>
<td>Leadership and teamwork are mediating factors between objective stress (e.g. workload and staffing) and the subjective experience</td>
<td>Information drawn from a variety of clinical staff using an open-ended set of questions to allow themes to emerge</td>
<td>Identified that many ED staff lack training in coping strategies and in 'non-technical skills' such as communication, situational awareness and leadership that could be rectified</td>
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<td>Interviewed reflect self-reported behaviour and may be biased by ineffective recollection, misunderstanding or embarrassment</td>
<td>Identifying positive and negative behaviours associated with working under pressure and consider interventions that may improve ED team functions</td>
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<tr>
<td>7. Yates, Benson, Harris and Baron, 2012, UK</td>
<td>To compare levels of psychological health in medical, nursing and administrative staff from a UK ED with a comparative orthopaedic department and to investigate the influence of coping strategies and the support people receive from their colleagues (i.e. social support)</td>
<td>n = 136 (30 nurses, 19 doctors, 47 administrative staff)</td>
<td>Semi-structured interviews were recorded and anonymously transcribed and analysed to extract broad themes from the interviews, and responses were coded using the NVivo computer programme</td>
<td>Insufficient information provided to comment</td>
<td>Proposition of staff experiencing clinically significant levels of distress was higher than would be expected in the general population</td>
<td>Better psychological health was associated with greater use of problem-focused coping and less use of maladaptive coping</td>
<td>One of the few studies incorporating a direct control comparison group</td>
<td>Identifying that many ED staff lack training in coping strategies and in ‘non-technical skills’ such as communication, situational awareness and leadership that could be rectified</td>
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<td>Information supplied regarding recruitment and participation</td>
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<td>Aims were not ethically approved</td>
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(Continues)
Training interventions can rapidly and positively affect staff perception of working environment, and this may also impact on patient care and safety, as well as staff turnover.

No segregation
– No data around effects on MD versus RN

§§Qualitative study using
– Included a 16-item focused ethnographic exploration including the healthcare team vitality instrument a 10-item, 5-point Likert-type scale survey, and revised nurse work index (NWI-R), both previously validated in many health care settings
– Descriptive analysis and t-tests conducted using SAS
– Team member checks and meetings, reflexive journaling and audit trail including field notes, audiotapes, transcripts
– Culture primarily described by four categories: cognitive including teamwork and ability to multi-task; environmental including limited physical space, poor work flow and overcrowding mixtures of acute and chronic stressors, technological limitations; linguistic including issues around barriers to communication and miscommunication and social attributes, siloing of knowledge and access, unprofessional behaviours, leadership (and staff) turnover, rites of passage
– Only a small portion of the ED culture revealed
– Not easily replicated
– No adjustment for experience or other demographic factors
– Varied recording times
– One ED site
– Culture positively correlated with incidence of adverse events; poor team climate, poor inter-departmental working relationships, poor safety climate, greater cognitive demands
– Four of the five working scales included in the staff perception of working environment questionnaire returned ‘poor’ findings and were positively correlated with incidence of adverse events; poor team climate, poor inter-departmental working relationships, poor safety climate, greater cognitive demands
– Data collected across clinical disciplines, demonstrates the clinical importance of staff perception of working environment for patient safety
– Data collected across clinical disciplines, demonstrates the clinical importance of staff perception of working environment for patient safety
– Data collected across clinical disciplines, demonstrates the clinical importance of staff perception of working environment for patient safety

9. Person, Spiva and Hurt, 2013, USA

TABLE 2. (Continued)

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</table>
| 8. Ajeigbe, McNeese-Smith, Leach and Phillips, 2013, USA | To examine the impact of a teamwork training protocol on perception of job environment, autonomy and control over practice in ED clinical staff | n (intervention) = 166 RNs and 25 MDs | – Comparative non-RCT descriptive study with a cross-sectional correlational design using self-reported validated quantitative questionnaires including the healthcare team vitality instrument a 10-item, 5-point Likert-type scale survey, and revised nurse work index (NWIR), both previously validated in many health care settings
– Descriptive analysis and t-tests conducted using SAS
– Team member checks and meetings, reflexive journaling and audit trail including field notes, audiotapes, transcripts | – Inclusion criteria for staff at both sites included that they had worked in ED for at least 6 months and were either full or part-time
– Staff demographics and ED experience aligned closely
– 0.91 Cronbach’s alpha > 0.84 | – Interventional study exploring effects of a positive intervention on ED staff perception of WE | – ED clinical staff who received no teamwork training showed higher levels of staff perception of job environment, autonomy and control over practice. This included most positive perceptions by staff of access to resources and feeling like their opinions were more valued | – 1; ††No segregation of effects on MD versus RN | – No data around response rate presented | 80 |
| 9. Person, Spiva and Hurt, 2013, USA | To examine the culture of an ED examining influences including stressful situations, pressure to perform and work-life balance | – Included ED nurses, physicians, clinical care partners, technicisms, customer services, leadership and support staff | – 55 Qualitative study using focused ethnographic exploration | – Included a 16-item demographic survey and informal and formal interviews, field notes, journalled identification of potential biases | – Constant comparative method with external verification and calculation of cultural salience
– Free listing responses | – Culture primarily described by four categories: cognitive including teamwork and ability to multi-task; environmental including limited physical space, poor work flow and overcrowding mixtures of acute and chronic stressors, technological limitations; linguistic including issues around barriers to communication and miscommunication and social attributes, siloing of knowledge and access, unprofessional behaviours, leadership (and staff) turnover, rites of passage | – Only a small portion of the ED culture revealed | – Management must value staff
– Improve workflow processes and remove barriers
– Development and training opportunities required for staff | 100 |
| 10. Rasmussen, Pedersen, Pape et al., 2014, Denmark | To determine the relationships between staff perception of WE and the occurrence of adverse events | n = 124
– n = 98 ED nurses, n = 11 medical specialists and n = 15 junior doctors | – Quantitative descriptive using a cross-sectional correlative design from a self-reported validated quantitative questionnaire
– Copenhagen psychosocial questionnaire job demands and influence components + demographics
– Linear regression analyses + descriptive stats | – Validated scales providing quantitative data
– Response rate 91% | – Four of the five working scales included in the staff perception of working environment questionnaire returned ‘poor’ findings and were positively correlated with incidence of adverse events; poor team climate, poor inter-departmental working relationships, poor safety climate, greater cognitive demands | – Data collected across clinical disciplines, demonstrates the clinical importance of staff perception of working environment for patient safety | – Data collected across clinical disciplines, demonstrates the clinical importance of staff perception of working environment for patient safety | 75 |
TABLE 2. (Continued)

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<tr>
<td>11. Lambrou, Papagiannou, Markoulis and Middleton, 2014, Cyprus</td>
<td>To examine nurses’ and physicians’ perceptions of professional environment and its association with patient safety in public EDs in Cyprus</td>
<td>n = 224 staff from other hospital areas was possible</td>
<td>Quantitative descriptive study cross-sectional correlational design from a self-reported validated quantitative questionnaire including the Revised Professional Practice Environment (RPPE) Scale and (b) the Safe Climate Domain of the Emergency Medical Services Safety Attitudes Questionnaire (EMS-SAQ) each with 4- to 5-point Likert scale ratings</td>
<td>– 224/277 of possible participants (81%) response rate</td>
<td>– Medical staff rated the professional practice environment slightly more highly than nursing staff, particularly around ‘staff relationships’, ‘internal motivation’ and ‘cultural sensitivity’. While both groups rated teamwork highly, both groups also rated ‘control over practice’ as the lowest domain examined. Staff are highly motivated and in indicate that they value and practice teamwork</td>
<td>– Clear data collection period and well-stipulated eligibility criteria</td>
<td>– RPPE Questionnaire was used in both medical and nursing staff, and some questions could have been perceived differently by the participants impeding responses provided</td>
<td>– Improvements in professional environment can ultimately improve patient safety</td>
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<td>n = 174 nurses and n = 50 physicians</td>
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<td>All five possible public ED sites</td>
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†Note: all survey completion was deidentified and voluntary, with appropriate accompanying ethical approval unless noted otherwise. ‡Data type (quantitative/qualitative) is identified in the study and/or on the basis of the analysis performed. §Note: all survey and interview data are subject to potential nonresponse bias and even response likelihood. Additionally, the selections required in surveys are often “relative” and so can be challenging to achieve consistently and reliably (self-responses). Additionally, there may be a response bias based on the psychological well-being of participants (single point in time survey). ¶There were additional study findings not related to the focus of this review not reported here. ††Convenience (cross-sectional) sampling and thus no causal inferences can be drawn. ‡‡No provision for open-ended responses so participants’ responses are constrained by study. §§MMAT classification system: A&E, accident and emergency; hrs, hours; MD, medical doctor; MMAT, mixed methods appraisal tool; OD, Orthopaedics department; RN, registered nurse; RPPE, Revised Professional Practice Environment; SAS, statistical analysis systems; SD, standard deviation; SEM, standard error of the mean; SPSS, statistics package for the social sciences; SSEM, Spanish Society of Emergency Medicine; SHOs, senior house officers; USA, United States; WE, work environment; WHOQOL, World Health Organization Quality of Life.
TABLE 3. Research evidence around ED doctors’ perceptions of their working environment

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<tr>
<td>1. Heyworth, Whitley, Allison and Revicki, 1993, UK</td>
<td>To describe occupational stress, depression, task and role clarity, work group functioning and overall satisfaction in senior ED medical staff</td>
<td>n = 201 respondents (consulants 71%) and n = 47 senior registrars (77%) drawn from a register of all ED consultants and registrars</td>
<td></td>
<td>72% overall response rate, response rate from consultants 71% and 77% from senior registrars</td>
<td>Captured a large proportion of this clinical group and thus multi-site information</td>
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<td>75</td>
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</table>

| 2. Williams, Dale, Gladman and Wellesley, 1997, UK | To investigate the relationship between accident and emergency senior house officers’ psychological distress and confidence in performing clinical tasks and to describe work-related stressors | n = 171 newly appointed ED SHOs from 27 hospitals | | | | | | | 75 |

| 3. McPherson, Hale, Richardson and Obholzer, 2003, UK | To identify levels of psychological distress in accident and emergency (ED) senior house officers so as to plan interventions that will help ED staff cope better in an | n = 37/64 SHOs from six EDs at district general hospitals in north London | | | | | | | 50 |

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TABLE 3. (Continued)

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<th>Author, year, country</th>
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<tbody>
<tr>
<td>Burbeck, Coomber, Robinson and Todd, 2002, UK</td>
<td>To assess occupational stress levels in ED consultants</td>
<td>UK practicing ED consultants completed lists provided by British Association of Emergency Medicine (BAEM) and the Faculty of Accident and Emergency Medicine (FAEM) – n = 373/479 responses – 350/479 survey completion</td>
<td>Mixed methods including cross-sectional correlational design from a self-reported validated questionnaire – Demographic and work-related information and included the general health questionnaire-12 (GHQ-12) to assess psychological distress, the symptom checklist-depression scale (SCL-D) to measure depression – Non-parametric statistics for GHQ-12 and SCL-D scores Qualitative data, including aspects of the job respondents enjoyed, analysed using the constant comparative method to develop coding frames – Logistic regression was used to build a predictive model of GHQ-12- and SCL-D – Demographic and stressor variables were correlated individually with both GHQ-12 and SCL-D scores. The six most highly correlated stressors were entered as independent variables in multivariate logistic regressions with GHQ-12 and SCL-D scores as dependent variables</td>
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| Taylor, Pallant, Cook and Cameron, 2004, Australia | To evaluate psychological health of ED physicians and identify factors that impact on their health | AEEM fellows – n = 323 | Quantitative descriptive cross-sectional correlational design from a self-reported validated questionnaire – Validated scales providing ordinal (parametric) data on scale of 1–4 to 1–10 | Significant positive correlation between work and life satisfaction and perception of control over hours worked and professional activity mix – Comparison to community population data – Conservative statistical significance set at 0.01 |

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<td>(r = 0.33, P &lt; 0.05), while the coping style 'Active' was significantly related to lower anxiety (r = −0.38, P &lt; 0.05), somatic complaints (r = −0.46, P &lt; 0.001) and years since qualification (r = 0.40, P &lt; 0.05)</td>
<td>– Large pool of specialist clinicians – Commonly used tools and thus comparison with other doctors was possible – Five text options enabled key themes to be identified – Open-ended text questions and stressful scenario description for qualitative comment – Also explored the effects of 'protective' factors identified in other studies (minimal input)</td>
<td>– Sample all drawn from one professional society – Limited follow up of non-respondents to the survey</td>
<td>– Assessment of characteristics, or combination of characteristics, within ED that are particularly problematic – Requirement for NHS provision of employment environments, in which doctors can practice effectively without compromising health</td>
<td>100</td>
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</tbody>
</table>

The RA had no other connection to the ED, administered the survey and was the only one who knew the tracking number. RA was not involved in the survey. It is unlikely that solving the ED overcrowding issue will necessarily translate into less stress for the residents. In fact, solving the overcrowding issue might increase resident stress as throughput pressure increases. Work stress and work satisfaction scores will vary across EDs. A non-probabilistic and intentional sampling based on participant availability may have introduced a selection bias. Data collected from each responder may have influenced the results more than they would have if the instrument had been administered mid-shift.

### TABLE 3. (Continued)

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<tr>
<td>6. Wrenn, Lorenzen, Jones, Zhou and Aronsky, 2010, USA</td>
<td>To identify factors other than work hours in the ED contributing to resident stress</td>
<td>n = 18 postgraduate year (PGY)-2 and PGY-3 EM residents</td>
<td>Twelve surveys and questionnaires were collected from each participant, four each from the day, evening and night shifts</td>
<td>Single site</td>
<td>Perceived stress scale, Zung depression scale, Zung anxiety scale, Revised life orientation test, Modified stress scale, Physical symptoms checklist, Perceived control of internal states scale, Satisfaction with life scale + demographics</td>
<td>Good follow up of non-responders to limit possible bias by responder characteristics</td>
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Psychological distress is prevalent in Chinese emergency physicians and they are at risk of ED physician retention focused around work environment (WE). All the physicians from three large general hospitals across a city were invited to participate in a web-based study. Amongst Chinese emergency physicians: 75% of the 4799 physicians who visited the website completed the survey; 538/3196 were ED physicians (response rate = 82%).

**TABLE 3.** (Continued)

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<tr>
<td>7. Estryn-Behar, Doppia, Guerami et al., 2011, France</td>
<td>To examine ED physicians’ perceptions of working conditions, satisfaction and health</td>
<td>Physicians – 31% of the 4799 physicians who visited the website completed the survey; 538/3196 were ED physicians – Control sample chosen at random from database of French physicians</td>
<td>§§Quantitative online questionnaire including descriptive cross-sectional and univariate analysis of data</td>
<td>– Reported overall response rate: 66%</td>
<td>– Intention to leave was highest amongst ED physicians; particularly female physicians</td>
<td>– Well-matched large sample</td>
<td>– Difficult to segregate the number of ED physicians included in the final analysis</td>
<td>– Many factors around ED physician retention focused around WE</td>
<td>75</td>
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<tr>
<td>8. Xiao, Wang, Chen et al., 2014, China</td>
<td>To measure psychological distress and job satisfaction amongst Chinese emergency physicians</td>
<td>n = 679 ED physicians from three general hospitals</td>
<td>§§Quantitative descriptive cross-sectional design using three self-reported surveys including the Hospital Anxiety and Depression Scale (HADS), Maslach Burnout Inventory-General Survey and Minnesota Satisfaction Questionnaire</td>
<td>– All the physicians from the EDs of three large general hospitals across a month were invited to participate</td>
<td>– Response rate: 82%</td>
<td>– Psychological distress is prevalent in Chinese EM physicians and they are at risk of having mental health undermined gradually</td>
<td>– Used well validated instruments to capture a good sample of senior ED physicians, providing a unique view of responsibilities in Chinese EDs</td>
<td>– National healthcare administrators need to legislate regulations to forbid attacking healthcare staff, guarantee physicians resting time and increase their income</td>
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Note: all survey completion was deidentified and voluntary, with appropriate accompanying ethical approval unless noted otherwise. § Data type (quantitative/qualitative) is identified in the study and/or on the basis of the analysis performed. ¶ Note: all survey and interview data are subject to potential sampling/bias and even response fabricated. Additionally, the selections reviewed in surveys are often “relative” and so can be challenging to ascertain consistently and reliably (soft responses), response bias based on the psychological well-being of participants (single point in time survey). ‡ There were additional study findings not related to the focus of this review not reported here. §§Cross-sectional, study and thus no causal inferences can be drawn. ‡‡ No provision for open-ended responses so participants’ responses are constrained by study. ¶¶MMAT classification system: ACES, Australasian College of Emergency Medicine; EM, Emergency Medicine; FACEMs, fellows of the Australasian college of emergency medicine; MD, medical doctor; MMAT, mixed methods appraisal tool; PGY, post graduate year; PTSD, post traumatic stress disorder; RA, research assistant; RN, registered nurse; RPEP, Revised Professional Practice Environment; SAS, statistical analysis systems; SD, standard deviation; SEM, standard error of the mean; SPSS, statistics package for the social sciences; SEM, Spanish Society of Emergency Medicine; SHOs, senior house officers; USA, United States; WE, work environment.
Leadership and management
‘Dealing with management’ and less frequent participation in management activities were negative working factors noted in studies on medical staff stressors and some mixed population studies. However, some mixed clinical groups commented positively on ability of management to offer flexible working arrangements and good quality leadership. Variation in supervisor support, with apparently good support for nurses and less effective support for medical staff, may reflect actual support levels, the mixed roles of professional colleges, variations in managerial support or different expectations of leadership and management support in these groups. Studies exploring nurses’ perceptions seemed to highlight lack of medical support as key factor contributing to stress in the ED.

Communication
Communication was infrequently cited as a key factor in staff perception of stress in the ED. There are a number of possible explanations for this including that it really was not a factor or conversely, because it is so much a ‘given’ in hospital contexts that staff acknowledge it as a ‘universal’ issue. Other cited factors that included a component of communication, such as inter-professional and interpersonal relationships were often cited as important potential stressors in nurses and mixed groups, and yet these often did not appear as significant components of stress in studies examining exclusively medical populations.

Workload/work time pressures
One of the major factors consistently noted within the literature as a stressor was staff workload. It is interesting that stress was not always related to workload per se (rather patient load, staffing or flow) but often related to perceived time pressures. While this is a variable finding in clinical staff, it suggests that objective measures (actual patient load and working hours) must be coupled with subjective (self-reported) measures such as perceived stress, for effective collection of baseline data prior to attempting potentially stress-reducing interventions. ED crowding is commonplace and is, perhaps, now considered the norm, therefore contributing less to stress levels. Note that workload is different to hours worked. Hours worked, where investigated, did contribute to staff stress levels. Processes around balancing patient acuity, staff skill mix and resources are often cited as potential stress reducers, and thus, management of such processes, including staff role expectation, can enhance service delivery.

Emotional drain
Emotional drain was another stressor noted within the literature. All of the studies that allowed for identification or rating of work stressors cited emotional drain as critical to developing an understanding of the ED working environment.

Managing the emotional ‘fall-out’ of work was often cited in research with nurses but was not always evident in studies of medical officers or with mixed clinical staff. Three quarters (9/12) of the studies examining nurses explored the psychological stress associated with the emotional burden of working in the ED, while only one quarter (2/8) did so with medical staff. While broad-based investigations provide evidence suggesting that mental strain is critical for all clinical staff, variable study focus may bias evidence-based perceptions of key staff issues. Like emotional drain, work-life balance and control of total working hours were often an issue raised in papers examining medical staff, but far less frequently raised in mixed or nursing studies. However, the effects of shift work and control of shifts were a common issue, especially for more junior medical and nursing staff.

Cultural variation
Geographical stratification of studies appeared to demonstrate more extreme levels of distress in Iranian and Chinese ED clinicians using the psychometric (translated) instruments applied to clinical personnel in western countries. However, no specifically designed cross-cultural studies appear to have been undertaken. This may be a valuable next step in developing international ED standards, as exposure to health and safety hazards and physical workload are becoming noted issues in literature from non-developed countries.

Improving satisfaction with working environment
While there are few studies examining temporal fluctuations in staff opinions of work environment, those have showed large and rapid (i.e. within 18 months) alterations. While many studies conclude with recommendations for improving ED staff perception of their working environment, very few report actual interventions aimed at achieving this goal.

A number of studies suggest debriefing processes would help reduce ED staff stress, but some even suggest debriefing should be mandatory following stress-evoking incidents; however, some evidence suggests that coping strategies around venting were related to greater staff anxiety and distress. Thus, evidence-based intervention is required.

Discussion
This integrative review indicated that each of the 31 included studies indicated that ED staff were aware of, and articulate, problematic issues in their workplaces. Excluding workplace violence and communication issues, workplace perceptions described by ED staff centre around common themes including perceived excessive workload, teamwork and feeling a skilled and valued member of a team, the impacts of traumatic events, the need for support (managerial, peer and social) and autonomy. Increasingly, evidence is demonstrating that poor staff perception of workplaces impacts on staff retention and, thus, personnel and professional capital in an ED and creates concomitant risks to patient safety. Such environments also increase the risk of developing mental health conditions such as burnout.

While essential for effective organisational management, standardised, repeatable and comprehensive assessment of staff perception of ED working
environment remains problematic. There are a considerable number of tools and processes being used to explore staff perception of working environment in ED, and they change across time. This makes longitudinal and comparative studies very difficult. Consistent approaches need to be applied in a longitudinal manner, so that there is a clear picture of key features of stressors in a range of staff, data on baseline stressors and the scope of ‘normal’ fluctuation. Moreover, research needs to be consistently well-designed and conducted to enhance the validity of findings.

EDs draw highly skilled staff and support staff morale and satisfaction through high levels of teamwork and clinical autonomy. Unfortunately, working autonomously in high-pressure environments with great demand on clinical skills can also decrease staff morale. EDs therefore need to achieve a balance that stimulates and challenges staff, without overwhelming them to retain workers with high levels of occupational capital. Given that work factors have been shown to contribute significantly to the development of burnout, a mental health condition that appears to develop more frequently in ED staff than in staff from other clinical areas, the development of interventions to improve staff perception of working environment is important. Such interventions could reduce the incidence of staff burnout and enhance staff retention.

EDs seemed to have quite different staff demographics than other clinical areas with more gender balance reported and greater numbers of more qualified staff. Comparisons of the outcomes of analysis of gender differences seemed to indicate that the more balanced the gender and seniority, the more positively staff reported regarding their working environment. This relationship appeared to hold up across nurses and doctors, across gender and apparently across levels of seniority/experience. Thus, the ED staff population would appear to be quite specific and an interesting group for investigation, comparison and eventual intervention.

Our literature search showed very few intervention studies. Where positive perceptions of ED were documented, staff often cited teamwork, collegiality, respect for multidisciplinary expertise and positive social and professional support as key to the positivity. This would suggest that a collective process, involving varying levels of medical and nursing staff, would be the ideal ‘unit’ for investigation and trial interventions to foster staff morale and enhance staff perception of EDs.

Limitations

The limitations of this study include the focus on English-language papers, which may limit inclusion of articles published in other languages that focused on perceptions of working environment. Selection of full-text articles for review from the initial keyword search was completed by a single author, which may have introduced a selection bias. The focus of the included studies varied widely, and thus, the findings were developed within varying contexts, which may have affected the interpretation of these data. Finally, while the MMAT enabled direct comparison of the quality of the quantitative, qualitative and mixed method studies, it did not provide the depth of review data found in tools that focus solely on either quantitative or qualitative data. It also failed to facilitate consistent and reliable quality assessment scores.

Conclusions

Regular assessment of staff perception of ED working environment allowing local, national and international comparisons is essential to inform and support ED development. The data should be used to evaluate the effects of training and practice interventions. The evidence base provided by this integrative review can be used to assist retention of professional capital in the workplace, enhancing hospital ED practice and patient management.

Acknowledgement

We acknowledge QEMRF for funding and contributing to this review.

Competing interests

None declared.

References

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