

Exploring the impact of employee engagement and patient safety

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Abstract

Background: Health service administrators are continually investigating new ways to improve the safety and quality of health services. A positive and powerful relationship between employee engagement and patient safety has been suggested in the research literature, and steps can be taken by employers to enhance engagement to improve the safety of health services, particularly considering the coronavirus disease 2019 (COVID-19) pandemic.

Objective: The aim of this review was to explore the current literature on the impact of employee engagement on patient safety.

Methods: A review of peer-reviewed literature relating to the impact of employee engagement on patient safety within health services between January 2015 and May 2021 was conducted using Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline Complete, Scopus, Health Business Elite and Business Source Ultimate databases. A search of grey literature using the Bielefeld Academic Search Engine database was also completed.

Results: Of relevant articles, 3693 were identified, of which 15 studies were included in this review. Ten articles measured employee engagement using existing, validated tools, whereas patient safety was most frequently assessed through surveys seeking staff member's perceptions of safety or the quality of care they provide. Overall, there appeared to be a positive correlation between employee engagement and patient safety, but the strength of the relationship varied.

Conclusion: Anecdotal accounts of improving employee engagement and improving patient safety abound, and the evidence reviewed appears in agreement. However, research into the impact of employee engagement on patient safety is in its early stages. As health service managers consider the best use of funding to support safe and high-quality care, evidence to support the positive impact employee engagement has on patient safety may be useful in managing the fallout from the COVID-19 pandemic.

Key words: employee engagement, patient safety, quality improvement, burnout

Introduction

The public expect safe and high-quality health services and facilities, where systems are implemented to ensure that patient harm is prevented [1]. It is therefore vital to identify factors that affect health services' ability to deliver safe and high-quality healthcare and, where possible, modify these factors to enhance the provision of this care.

Operationally, employee engagement is a positive work-related mindset, where staff are physically, mentally and emotionally connected to work [2]. Engaged employees have strong emotional, rational and behavioural attachments to their job and their organization [3] and have been defined as a person's connection to their organization [4]. Kahn's theoretical model of employee engagement describes three psychological conditions that have an impact on employees' levels of engagement or disengagement: meaningfulness, safety and availability [5]. Within the healthcare environment, staff engagement can be said to primarily refer to the experience of joy and meaning in the work of healthcare [6]. In addition, Kahn's model of engagement in this environment

suggests that staff must perceive work as 'safe' and have adequate resources available, in order for them to be engaged [5].

It has been suggested that there is a positive and powerful relationship between staff engagement and the safety and quality of the care they provide [7, 8] wherein employees engaged with their work will provide superior care to their patients. By actively engaging those healthcare workers who have the most contact with patients and their families, hospitals may better ensure their priorities and policies align with patient care requirements.

Increasingly within the hospital setting, there is growing interest in exploring how employee engagement directly impacts patients and the quality of care they receive. In point of fact, the 'Triple Aim' [9]—describing how the improvement of healthcare systems requires simultaneous focus on improving patient experience, improving population health and reducing healthcare costs—has increasingly shifted to the 'Quadruple Aim', where the work life of healthcare workers should also be improved [10]. Progress towards this fourth

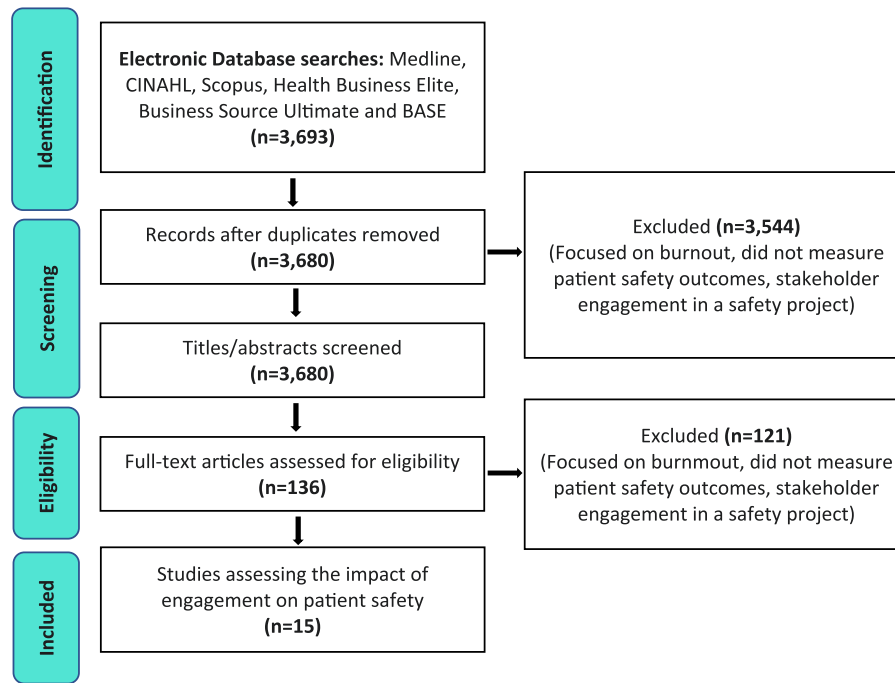


Figure 1 Literature search results and inclusions/exclusions.

goal within the Quadruple Aim can be measured through workplace engagement and workplace safety. By focusing on this goal, the workforce will be encouraged to find joy and meaning in their work, improving their experiences of providing care [6]. The recent and ongoing coronavirus disease 2019 (COVID-19) pandemic has also undoubtedly affected healthcare staff's engagement, and determining the impact of this change on patient safety is timely to determine if engagement can be enhanced despite this ongoing challenge.

To date, there has been no review of existing literature regarding the impact of work engagement on patient safety outcomes or quality of care within a healthcare setting, leading to the novel nature of this review. Understanding the impact of engagement on patient safety outcomes will help to determine if investment in altering engagement will lead to better outcomes for patients in a resource-constrained health system.

Aim

The purpose of this review is to address the following research questions:

1. What are the indicators of employee engagement and how are they measured?
2. Which patient safety outcomes are addressed and how are they measured?
3. What is the impact of employee engagement on these outcomes?

Methods

The primary investigator conducted a review of medical and business literature related to employee engagement on patient safety outcomes or quality of care within a healthcare setting.

Due to the nature of the research questions, a variety of health and medical research, as well as business and management databases, were included in the search. Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline Complete, Scopus, Health Business Elite and Business Source Ultimate were searched for English language research published on or after 1 January 2015 to May 2021. The author focused on contemporaneous research to ensure that included articles were of relevance and significance to the current health environment.

A set of search strategies was developed for the following databases: CINAHL, Medline Complete, Scopus, Health Business Elite, Business Source Ultimate and, for grey literature, the Bielefeld Academic Search Engine (BASE). Controlled vocabularies, synonyms and keywords were used to create search strategies for three concepts: hospital or healthcare setting, employee engagement and patient safety. The strategies were added together using the AND Boolean operator to identify relevant articles.

Initial searches identified 3693 articles. After duplicates were removed, the primary investigator reviewed titles and abstracts for 3680 articles. Full-text copies of articles that appeared to meet the search criteria were further reviewed by the primary investigator to determine whether they should be included. To be included, articles needed to be empirical research, include a measure of engagement as a predictor and include a measure of patient safety. Studies were excluded if they conceptualized engagement as an outcome (as opposed to an explanatory variable), as this research is focused on how employee engagement impacts patient safety, rather than whether safety culture impacts employee engagement. Studies determined to meet the inclusion criteria were reviewed by the other authors to ensure rigour.

This process resulted in 15 articles being included in the final analysis (Figure 1).

Thematic analysis, used to identify, analyse and group themes within a data set, was applied to all studies to identify themes and subthemes of the research. Studies were first coded inductively by the primary researcher, with coding and theme development directed by the content of the data set in the context of the research question. Similar codes were grouped together in a spreadsheet, and themes were generated. These were then reviewed by the research team, and either refined or discarded following team discussion and agreement. This review considered the frequency of theme occurrence, as well as the significance and contribution to the data set. The refined themes were defined, named, and explored as answers to the posed research questions.

Results

The purpose of this review was to identify and synthesize existing evidence on the relationship between employee engagement and patient safety. The resulting articles demonstrate a broad variety of literature examining the mediating role employee engagement plays in patient safety. The characteristics of the 15 articles identified through the literature review are summarized in [Table 1](#).

What are the indicators of employee engagement and how are they measured?

Employee engagement is not measured by any one indicator. A variety of tools to measure different indicators were identified in the reviewed literature. The majority of indicators of engagement included the assessment of employees' levels of vigour, dedication and absorption [11], which is defined as the psychological state of staff; the performance constructs of observable behaviour and a disposition or a combination of these factors [11]. This was primarily measured through the Utrecht Work Engagement Scale (UWES) [12]. Other validated tools such as the Gallup Q¹², the Safety, Communication, Operational Reliability, and Engagement (SCORE) survey and a validated empowerment tool developed by Spreitzer [13] were used in other studies. These tools provide several questions, with responses chosen from a Likert scale. Other indicators explored through these tools included employees' self-reported job satisfaction or intention to leave their role [14], as well as employees' opinions regarding opportunities for development and support [15]. In addition to these tools, some articles measured engagement through staff surveys that asked employees to report on their self-perceived levels of engagement at work [16, 17] or their own validated engagement tool [18].

Which patient safety outcomes are addressed and how are they measured?

Similarly, there was a range of patient safety indicators used within the literature. Objective measures of safety, such as incidence of large-scale adverse events (LSAEs), which describes the frequency of serious preventable incidents, 7-day mortality, which reports the rate of deaths of patients 7 days after their admission to hospital, and frequency of medical errors were the main indicators [16, 17, 19]. Staff members' perceptions of safety or the quality of care within their organization were used to measure patient safety [18,

20–22]. One study relied on patient perceptions of safety and quality [23], providing a more comprehensive picture of safety within health services than through staff perspectives alone. The most common tool used to measure patient safety was the Safety Attitudes Questionnaire (SAQ). This questionnaire assesses staff members' perceptions of safety climate and was used to seek feedback on teamwork climate, safety climate and stress recognition [15, 17, 24–26]. The Hospital Survey of Patient Safety Culture (HSOPSC) was also used [18, 25], as was a research questionnaire exploring five dimensions of service quality (the SERVQUAL scale) [23].

Data presented for both employee engagement and patient safety indicators came from a variety of sources and tools. Some were objective and validated, such as the UWES [20, 23, 24] and the SAQ [17, 18, 26], which provided more rigorous results than unvalidated tools.

What is the impact of employee engagement on these outcomes?

Overall, there was a positive association between employee engagement and patient safety, but the strength of this association varies. Staff members who reported being more engaged were also more likely to look favourably upon the quality of care that they, their unit or their organization provided and their attitudes towards patient safety [14, 20, 27]. Researchers also concluded that employee engagement is a predictor of patient safety. In these studies, engagement was identified as having a 'protective role', where employee engagement protected patient safety from being diminished by external events, and higher employee engagement predicted improvements in patient safety indicators such as LSAEs, 7-day mortality and medical errors [16, 17, 19].

Other studies concluded that employee engagement is a mediator of several variables, including patient safety [21, 24]. These authors concluded that access to professional resources at work, as well as external lifestyle factors, increased staff members' performance at work and their commitment to the organization and patient safety [24]. Another study concluded that various human resources management practices provide employees with resources that lead to higher healthcare performance indicators in quality and safety via engagement [21].

Discussion

Statement of principle findings

To better understand the identified indicators of employee engagement, patient safety and their interrelationship, three themes were identified within this literature review. These were as follows: (i) organizational and individual resources influence employee engagement, and these resources can be manipulated; (ii) the exact nature of the relationship between engagement and safety has not been quantified and (iii) staff heterogeneity will impact the generalizability of findings.

Interpretation within the context of the wider literature

These three themes are now explored in reference to the wider literature to show how these findings relate to previous research conducted on employee engagement, patient safety and their interrelationship.

Table 1 Summary of studies meeting search criteria

Authors	Source	Country	Healthcare worker	Engagement measure used	Safety measure used	Main findings	Statistical size
Antino <i>et al.</i> [23]	Safety Science	Mexico	Nurses; specialized doctors; general workers; social and psychologists Nurses	UWES	SERVQUAL	In hospital units with a stronger patient safety culture, the employees reported higher work engagement.	$r = 0.40$ $P < 0.01$
Cheng <i>et al.</i> [24]	Journal of Nursing Management	China	Nurses	UWES	SAQ	Work engagement positively mediated the relationship between perceived nursing professional practice environment and attitudes about patient safety.	$\beta = 0.218$ $P < 0.001$
Dong <i>et al.</i> [20]	Journal of Nursing Management	China	Nurses	UWES	'How would you rate the quality of nursing care in your unit?'	There was a significant positive relationship between work engagement and nursing care quality.	$\beta = 0.314$
George <i>et al.</i> , [16]	The Joint Commission Journal on Quality and Patient Safety	USA	All staff members invited to participate	US DVA All Employee Survey	Incidence of LSAEs	An analysis of LSAEs among DVA staff surveys identified that employee engagement significantly predicted LSAE incidence.	$X^2 = 23.68$ $df = 1$ $P \leq 0.0001$
Sammer <i>et al.</i> [25]	Journal of Patient Safety	USA	'Clinical staff in each unit'	Gallup Q ¹²	SAQ HSOPSC	This study demonstrated when there is a positive patient safety culture, a more engaged employee and a more satisfying patient experience, there may be less all-cause harm.	Nine of the 13 domains of engagement were significantly correlated with all-cause harm at a P -value of ≤ 0.05 0.25 (0.001)
Zallman <i>et al.</i> [18]	Journal for Healthcare Quality	USA	Variety of staff including physicians, nurses, allied health professionals, secretaries and 'other'	Surveys developed and validated internally	Modified Perceptions of Patient Safety (POPS) surveys, validated internally	Significant correlations were found between staff engagement and POPS. There were significant increases in POPS with increases in employee engagement.	$P < 0.001$
Brubakk <i>et al.</i> [17]	BMJ Open	Norway	All staff with a tenure >3 months invited to participate	Modified General Nordic Questionnaire for Psychological and Social Factors at Work	SAQ Patient outcome data	Engagement among middle managers was significantly associated with 7-day mortality.	$P < 0.001$

(continued)

Table 1 (Continued)

Authors	Source	Country	Healthcare worker	Engagement measure used	Safety measure used	Main findings	Statistical size
Van Bogaert <i>et al.</i> [31]	BMC Health Services Research	Belgium	Nurses, medical staff, allied health professionals and clinical managers	UWES	Rate perceptions of care quality on a Likert scale	Work engagement was associated with improved perceptions of quality of care.	$P < 0.001$
Brandis <i>et al.</i> [30]	Journal of Health Organisation and Management <i>Occupational Medicine</i>	Australia	Nurses, medical staff, allied health professionals and administration staff	Questions based on Spreitzer's dimensions of engagement [13]	Safety Organizing Scale	Employee engagement has a strong, positive relationship with patient safety culture.	$P < 0.001$
Loerbroeks <i>et al.</i> [22]		Germany	Medical staff	UWES	Self-reported perceptions of care tool [33]	Increasing work engagement was associated with respondents' perceived better care.	b for the total score = -0.20 , 95% CI -0.28 , -0.11
Sexton <i>et al.</i> [26]	BMJ Quality & Safety	USA	'Staff with 0.5 full time equivalent or greater for at least four consecutive weeks prior to survey' were able to participate	SCORE	SAQ	Walk Rounds with feedback were associated with better assessments of safety culture, higher workforce engagement and lower burnout.	$P < 0.001$ for four of the six engagement domains
Tsiga <i>et al.</i> [19]	Burnout Research	Greece	Medical staff	UWES	Internally developed tool	Engagement had a protective role in preventing medical errors among surgeons.	$P = 0.016$
Van Bogaert <i>et al.</i> [14]	BMC Nursing	Belgium	Nurses	UWES Semi-structured interviews	Semi-structured interviews	Nurse reported job outcomes and quality of care explained variances of work engagement 59% and 53%, respectively.	Comparative Fit Index = 0.923
Daugherty Biddison <i>et al.</i> [15]	BMJ Quality and Safety	USA	All staff invited to participate	Gallup Q ¹²	SAQ	Moderate to strong positive correlations were found between employee engagement and four SAQ domains.	$P \leq 0.001$
Shantz [21]	Personnel Review	UK	All staff invited to participate	NHS National Staff Survey	NHS National Staff Survey	Training and decision-making were positively related to quality of care and safety via work engagement.	$P < 0.01$

Abbreviation: DVA, Department of Veterans Affairs; NHS, National Health Service.

Organizational and individual resources influence employee engagement, and these resources can be manipulated

Increasingly, health systems are being affected by resource constraints, particularly in the context of ensuring cost-neutrality or profitability, as well as patients' care needs becoming progressively more complex [15]. A number of studies included in this review used the 'Job Demands, Job Resources' model to describe the relationship between resource availability and employee engagement, where increasing demands while decreasing resources creates strain on the workforce [11, 28, 29].

Resources that affect engagement include both external, organizational resources and personal, internal capability-related resources. Organizational resources include factors such as job characteristics and job crafting [20, 21, 26], organizational culture [16], staffing levels and budgets [26], available supports and controls [14] and opportunities for personal growth [21]. Personal resources include resilience [20, 21, 26], individual capability [30] and self-management [14]. These factors can be altered to affect employee engagement [24].

Two studies also concluded that organizational resources have an impact on internal resources [20, 31]. It was noted that constrained organizational resources, such as poor communication, poor managerial support and lapses in accountability, can lead to reduced capability [30]. This in turn leads to depersonalization, impairing the quality-of-care staff provide as they disassociate from care [22]. In the converse, additional or strengthened organizational resources, such as leadership involvement, can strengthen individual's personal resources [17, 30]. Additional organizational resources lead to the growth of individual resources, which in turn is good for the organization [21, 30].

The implication that the manipulation of organizational resources and individuals impacts employee engagement, which may then impact patient safety, provides a potential strategy to improve both employee engagement and patient safety.

The exact nature of the relationship between engagement and safety has not been quantified

While it has been suggested that there is a positive and powerful relationship between staff engagement and the safety and quality of the care they provide [7, 8], it was clear from some studies that the relationship between safety and engagement has not always been considered. Safety culture describes the value, attitudes and behaviours of individuals or groups that determine the organization's commitment to safety [32]. Two studies concluded that safety culture may not have traditionally considered employee engagement [15, 16] and recommend that this is considered in the future. When exploring how employee engagement impacts patient safety, one study suggested that engaged employees were more likely to report safety concerns and also to participate in efforts implemented to improve system weaknesses in order to improve patient safety [18].

The reverse of the research question was also suggested—that is, that the stronger the patient safety culture, the more engaged the employees [23]. It is possible that high-performing teams motivate the employees in these teams to be more engaged [3]. Similarly, poor safety culture may lead to

disengagement [18], or clinicians that cannot provide quality care may feel exhausted [22].

Staff heterogeneity will impact the generalizability of findings

Multiple studies described the heterogeneity of the work groups across the health care setting [17, 21, 23, 31]. Due to the complexity of healthcare organizations, the organization will employ staff across multiple work groups, from specialized physicians to administrative staff to management. These work groups' differences will affect their engagement with work and their impact on patient safety. For example, nursing staff and allied health professionals 'belong' to a professional group, and this belonging may increase their engagement at work [21]. These differences may be less apparent in specific health services, such as Veterans Health Administration-funded facilities, where the choice of an employer may increase the homogeneity of staff [16].

Staff heterogeneity was repeatedly highlighted to indicate that results applicable to one group may not be applicable to another [14, 17, 21, 23, 30]. Some studies focused on particular work groups. For example, one study explored physician engagement's impact on patient safety, noting that physicians can be weak team players based on their training and differences between expectation and reality [31]. This implies that strategies that are implemented to affect employee engagement may need to be tailored for the work group it is targeted for. In addition, it was also suggested that improvements in one group's engagement may impact another group's engagement. Improving physician engagement was found to improve staff engagement, and efforts to improve engagement at the clinical work unit level may also result in efforts to improve provider engagement [18].

This indicates the need for results generated from indicators of employee engagement to be reported for each separate work group, rather than being homogenized. This is also important to better measure the impact of strategies that are implemented to affect employee engagement due to the heterogeneity of each staff group.

Implications for policy, practice and research

The results of this review highlight the need for more methodologically rigorous research to identify directions for future practice change within health services. It is recommended that, in future studies, both employee engagement and patient safety are measured using existing validated, objective tools. As research in this area matures, future reviews may be able to use a more rigorous quality assessment process to evaluate the quality of the research [15]. In addition, studies that explore both qualitative and quantitative impacts of engagement on patient safety should be further explored, as there are a multitude of indicators that can be harnessed to determine whether patient safety is truly affected. It is also recommended that, if perceptions of patient safety are being explored, it would be wise to seek feedback from those potentially most affected by engaged employees—our patients.

An empirical gap in research exploring the relationship between employee engagement and patient safety is therefore evident. This gap requires further investigation, as this relationship may identify valuable areas for further investment in a resource-constrained health system to produce significant improvements in patient safety. Further investigation into this

relationship within the Australian healthcare system, using validated employee engagement and patient safety measures, is therefore warranted.

Strengths and limitations

This review focused on exploring the relationship between employee engagement and patient safety within the health-care setting. Only 15 articles met the inclusion criteria. The inclusion of only English language studies limited the number of studies eligible to be included in the review and may result in language bias. Indeed, most articles included were based on studies conducted in either European or American healthcare systems. Publication bias may result in studies, where authors identified that there is a relationship between employee engagement and patient safety being over-represented in the literature identified. Additionally, the studies included in the review featured heterogeneity in their design and metrics assessed, making direct comparability difficult. Finally, most studies reviewed were designed to assess single hospitals or individual inpatient clinical units, potentially limiting the generalizability of their findings.

To increase the strength and holistic nature of this review, the search used five databases for peer-reviewed research, the grey literature search engine BASE and reference lists of included papers to identify potential studies within this field for inclusion within this literature review. The search also included both quantitative and qualitative measures of patient safety and employee engagement and included a rigorous review of outcome measures and reporting. The articles reviewed explored employee engagement from a variety of employees' perspectives, including non-clinical staff. While it cannot be disputed that clinical staff have a significant impact on the quality of care that patients receive, non-clinical staff also play a role in patients' care quality and experiences [3].

Conclusions

While studies investigating relationships between employee engagement and patient safety exist, high-quality peer-reviewed evidence regarding the definitive impact of employee engagement on patient safety remains in its early stages. Further investigation is warranted to identify potential resource investment areas for health service managers to consider in the constant battle to improve patient safety. As health service managers consider the best use of funding to support safe and high-quality care among the significant challenges of COVID-19, research into employee engagement may assist in identifying strategies to manage the impact of this pandemic on our healthcare staff.

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