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Abstract

Background

Healthcare systems worldwide increasingly value the contribution of employee voice in ensuring the quality of patient care. Although employees' concerns are often dealt with satisfactorily, considerable evidence suggests that some employees may feel unable to speak-up, and even when they do their concerns may be ignored. As a result, in addition to trans-national and national policies, workplace interventions that support employees to speak-up about their concerns have recently increased.

Methods

A systematic narrative review, informed by complex systems perspectives addresses the question: "What workplace strategies and/or interventions have been implemented to promote speaking-up by employees"?

Results

Thirty-four studies were included in the review. Most studies reported inconclusive results. Researchers explanations for the successful implementation, or otherwise, of speak-up interventions were synthesised into two narrative themes (1) hierarchical, interdisciplinary and cultural relationships and (2) psychological safety.

Conclusions

We strengthen the existing evidence base by providing an in-depth critique of the complex system factors influencing the implementation of speak-up interventions within the healthcare workforce. Although many of the studies were locally unique, there were international similarities in workplace cultures and norms that created contexts inimical to speaking-up interventions. Changing communication behaviours and creating a climate that supports speaking-up is immensely challenging. Interventions can be usurped in practice by complex, emergent and contextual issues, such as pre-existing socio-cultural relationships and workplace hierarchies.

Keywords: healthcare systems, healthcare policy, narrative review, speaking-up, workplace culture, patient safety, complex adaptive systems

Introduction

Healthcare employees who 'speak-up', or 'raise concerns' to those with authority to act, play an important role in the detection and prevention of avoidable harm to patients (2). Evidence internationally suggests that organisations where employees freely speak-up about concerns, and where concerns are responded to appropriately, are associated with better patient outcomes (3) such as improved patient safety and patient experience, reduced costs and improved staff wellbeing (4) morale (5). However, although many employee concerns are dealt with satisfactorily, the act of speaking-up is not straightforward (6). Some staff feel unable to speak-up and even when they do their colleagues and organisations may ignore their concerns or respond inappropriately (7,8). A great deal of moral courage is, therefore, required by healthcare employees when speaking-up, but the fear of negative repercussions, organisational inaction and the desire to "fit in" can result in a silencing of employees' voice (9,10). For similar reasons it also takes 'hearer courage' (11) to act on concerns, although the experiences and perceptions of concerns recipients are under-researched.

These significant individual, professional and organisational barriers exist despite the implementation of national and trans-national policy interventions, including legislation and regulatory guidance specifically designed to support and protect healthcare employees who speak-up (10,12–15). A possible consequence of the limited effect of policy and regulatory interventions (16) is the recent increase in studies of workplace interventions aimed at promoting and supporting employees to speak-up about their concerns. For the purposes of this review a speak-up intervention is defined as any attempt to improve internal organisational processes for employees who wish to speak-up about unsafe, unethical or poor-quality practices by colleagues, to persons able to effect action. The review question is: "What workplace strategies and/or interventions have been implemented to promote speaking-up by employees"?

In addressing this question, contextual factors and organisational mechanisms (17) that influence (for better or worse) the implementation of employee speaking-up initiatives will be identified. Of course, local strategies play out within the larger political, policy and legal context mentioned above. Reviewing strategies at the 'sharp end' of practice may provide insights to policymakers about the

interface, if any, between 'top down' and 'bottom up' speak-up policies and initiatives. Table 1 provides an example of the complex policy interface which currently co-exist in NHS England to guide and support organisations and their employees who wish to speak-up in the workplace.

TABLE 1 HERE

Recent systematic reviews of speaking-up and related concepts such as psychological safety, and safety voice (18–20) have contributed much in terms of understanding the efficacy and effectiveness of interventions. Each review offers a specific perspective, such as a focus on speaking-up with patient safety concerns (18), or team building interventions (19), or 'safety voice' interventions which include concerns raised by persons other than employees (e.g. members of the public, patients). Our review differs from existing reviews as all speak-up initiatives are included, other than concerns raised by non-healthcare workers such as patients or the public.

The review also adds substantively to existing understanding in two ways; firstly by locating the evidence generated by the review question within a broader health systems and policy debate, and secondly by undertaking an in-depth critique of the evidence that is informed by a complex systems perspective, emphasising the dynamic relationships and emergent outcomes between component parts of a healthcare system (21). Change within a complex system is characterised by unpredictability and a realisation that what works in one setting will not necessarily work in another (22). This is a perspective that is currently under-represented in the systematic review literature and one that may lead to more useful evidence syntheses (23).

1. Materials and methods

The corpus of work in this topic area embraces diverse theories and methods across numerous clinical and non-clinical settings which were unsuitable for a formal weighting of the evidence required for a systematic "Cochrane-style" review. Instead, a narrative review and synthesis was chosen as the best approach to "tell the story" within the literature (24). Greenhalgh et al (25) define a narrative review as a scholarly summary which deepens understanding through interpretation and critiquing of the literature. Although diverging from the classic systematic review methodology, narrative reviews are

not unsystematic (in the sense of being *ad hoc* or careless), and are conducted and presented in a systematic way, depending on purpose, method and context. In order to review as comprehensive a body of research as possible, literature searches were designed to include speak-up interventions from all areas of healthcare practice and settings, including education. Grey literature, statutory or regulatory interventions or incentives are not reviewed.

Systematic searches

A broader cross-sector review, which this review contributed to, was registered on PROSPERO (Registration CRD42018106311) on 08/08/2018. Searches were conducted by J.B and A.J between June 2018 and August 2018, and updated in July 2019. Table 2 details the search terms utilised.

Table 2 here

Screening

Titles and abstracts were screened independently by A.J and J.B. for relevance. Eligible papers were read in full and sifted into a 'yes', 'no' or 'maybe' category. For example, papers categorised as 'No' related to research into physiological voice or speaking disorders, or where authors used the term to 'raise concerns' in relation to their findings identifying possible areas of concern to others. 'Maybes' had referred in the abstract to 'speaking-up', but the intervention itself was not designed with this in mind and/or speaking-up was not identified as an outcome. All papers in the 'maybe' category, or where there was disagreement between the reviewers, were re-read in line with the eligibility criteria by each reviewer before a final decision was agreed. A third reviewer was on-hand to further arbitrate where needed, but agreement was reached between the reviewers and the third-party was not required.

Data extraction

Data were extracted by A.J and J.B. into a data extraction template informed by guidance on conducting narrative synthesis in systematic reviews (24). Data were extracted on authors, country of origin, year of publication, study type and methods, the study participants, the setting for the intervention, the type of intervention i.e. discrete or embedded as part of a larger intervention, the

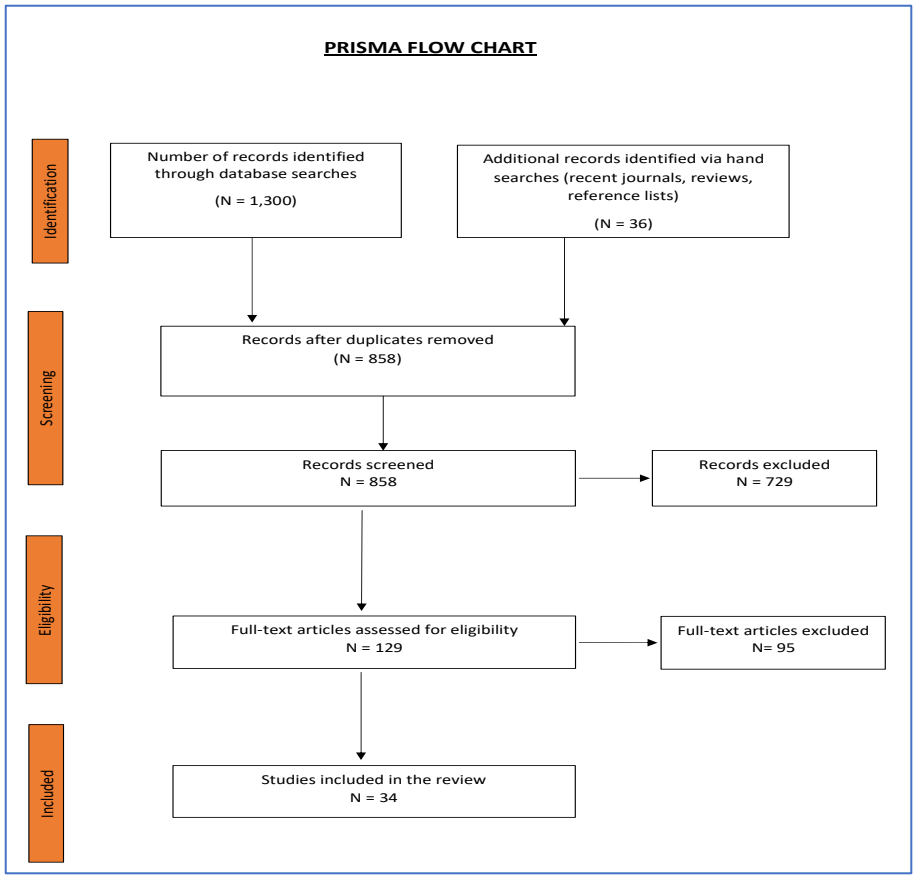
interventions aims, outcome measures, key results, and whether the authors identified any moderators or mediators to the intervention.

Data analysis

The team's prior experiences of researching the topic area and undertaking narrative reviews (26,27) indicated that an inclusive and holistic review of research approaches was required to represent the complexities and ambiguities associated with the topic and, in so doing, help identify a range of narratives. Although the emphasis was mostly on including rather than excluding papers, the relevant Critical Appraisal Skills (CASP) frameworks guided the critical appraisal of papers which led to the exclusion of some studies (for example11) due to a lack of key information on research ethics approvals and data analysis. Data were subsequently themed and synthesised by J.B. and A.J, with particular reference to authors' accounts of the effectiveness of interventions and contextual factors in the form of implementation barriers or facilitators identified. Other members of the team critically reviewed and contributed to the iterative process of identifying themes and synthesising literature. The synthesis of findings was also informed by recent writing on applying complex adaptive systems approaches in healthcare (1,29), adding a novel approach to existing systematic reviews in this field.

2. Results

The searches identified 1,300 citations with a further 36 records identified via hand searches of reference lists for additional papers not identified via electronic searches. After eliminating 478 duplicates, 858 records were screened as titles and abstracts. Of these 729 were excluded for not meeting the inclusion criteria (for example, the papers were not reporting on empirical research, or were found to be descriptive overviews such as editorials or viewpoint articles, see table 2), leaving 129 articles for full-text screening.



Following full text review, 95 papers did not fit the inclusion criteria, leaving a total of 34 papers in the final review (see PRISMA flowchart). The remainder of this paper is organised by initially describing the types of study design and interventions reported. This is followed by interpretation and synthesis of the findings in relation to health policy, including taking into account the contextual factors (23) identified within the studies which influence (for better or worse) the implementation of employee speaking-up initiatives.

Study design and types of interventions

Tabulation is commonly used in systematic literature reviewing to represent study characteristics visually (24). Table 3 arranges the studies reviewed into three types of intervention: educational initiatives, workplace/workforce training initiatives and workplace initiatives (not involving formal or overt training, or educational input). Included studies came from a range of European, Asian and North American countries, with the majority deriving from the USA.

Table 3 here

Table 3 also shows that 23 studies employed a quantitative approach, including:

- randomised controlled trials (RCTs) of speak-up interventions, for example simulation (30,31) and training programmes (32)
- quasi-experiments of speak-up educational interventions for registered nurses and healthcare students (33,34)
- post-course surveys following safety communication training (35) and speaking-up action exercise (36)
- pre- and post-implementation surveys of interventions, including: executive walk-rounds (EWRs) (37–42); various team-based communication tools for use by trauma resuscitation teams; interventional ultrasound teams; theatre /anaesthesia teams and during infection prevention practices (43–51) and an educational intervention and an educational course for nursing students (52)

Five qualitative studies evaluated interventions focussing on

- interdisciplinary team development using focus group interviews and auto-ethnography (53)
- communication and decision making using observation, audio-recorded meetings and individual interviews (54)
- infection prevention using individual interviews (55)
- EWRs using semi-structured interviews (56,57)

Six mixed methods studies consisted of pre- and post-implementation evaluations of

- speak-up teaching and learning activities using survey, focus group and individual interviews (58)
- a patient safety course for medical students using survey and written vignettes (59);
- an intervention to prevent faculty mistreatment of medical students in learning environments using surveys and focus groups (60)

- workplace patient safety initiatives using qualitative interviews, observations and surveys (61,62), including routine hospital data (63)

Interventions were also themed by type of intervention:

- Stand-alone: interventions focussing only on improving speaking-up (30,31,33,36–42,44,45,47,50,53,56–58,61), for example when preparing social work students for clinical placements (58), speaking-up to senior managers or executives during EWRs (40) or with multi-disciplinary team members on medical wards (53).
- Bundled: where speaking-up interventions are implemented and subsequently studied within a multifaceted initiative (32,34,35,43,46,48,49,51,52,54,55,59,60), such as those focussing on speaking-up and infection prevention during insertion of a central line (48) or speaking-up and improved team working during perioperative emergencies (35).

Studies which evaluate national or transnational policy interventions and initiatives is a clear gap in the literature. Indeed, the descriptions of local speak-up initiatives implemented in workplaces or educational institutions are devoid of any consideration of national or transnational policy. The consequences of this will be discussed in later sections of the review.

The following sections discuss indicative conclusions about the effectiveness (or otherwise) of the interventions. Given the large array of interacting and emergent factors that influence whether interventions in "messy" and complex systems are successfully implemented or not, it is unsurprising that the studies reviewed could not be apportioned into a neat binary of effective or ineffective interventions (1). Instead, the effectiveness of most of the interventions reviewed were indeterminate, where some aspects of an intervention resulted in the desired changes, but other aspects did not. As a number of others have recently noted (64–66) success or failure of interventions within complex adaptive systems are rarely 'all or nothing', but typically comprise of shades of grey where interventions are partially fulfilled. Based on these insights and informed by narrative reviewing guidance (24), we divide the results section into an overview of interventions that were effective,

ineffective or indeterminate, followed by a section which synthesises the results in order to draw new insights and conclusions based on the body of evidence.

Results 1: Effectiveness or otherwise of interventions.

A number of pre-existing barriers and facilitators to speaking up were identified in the literature which the interventions aimed to address (see table 4 for an overview of barriers and facilitators). However, a number of limitations, insufficiently serious to exclude a paper, resulted in difficulties reaching conclusions about intervention effectiveness. For example, some studies reported post-training improvements in staff perceptions of speaking-up, despite the absence of any pre-implementation baseline measures (35,36). Other limitations were apparent elsewhere (38,42,47), such as the evaluation of an intervention to promote speaking-up behaviours mostly consisting of self-reported perceptions of "teamwork climate", with little specific mention of speaking-up. Additionally, the vast majority of studies measure changes in perceptions, or speaking-up within simulated clinical environments, or in the classroom, rather than speaking-up in clinical practice.

Effective interventions

Several effective interventions focussed on introducing team communication training approaches to improving speaking-up in a range of clinical situations including interventional ultrasound (43), operating theatres (36) and infection control practices (67). For example, Gupta et al (43) undertook a pre- and post-implementation survey measuring the effectiveness of teamwork training, including improving the culture of speaking-up within teams. Statistically significant improvements ($p<.001$) were reported in post training perceptions of difficulties speaking-up. Statistically significant findings were also reported following team work training in a trauma resuscitation area (46) and a paediatric surgical service team (51), including improved perceptions of speaking-up about patient safety concerns. Similarly, Hanson (67) who initiated team-training in the context of infection prevention, reported significant changes ($p<.001$) in pre- and post-training perceptions of speaking-up when participants deemed an action did not comply with best-practice protocols.

Weiss et al (31) reported anaesthesia residents were significantly more likely to speak-up than anaesthesia nurses at pre- and post-implementation stages of an intervention promoting speaking-up. However, both nurses and residents were more likely to speak-up following assertiveness team-training, compared to those who only undertook an effective team-training course.

Sayre et al (33) implemented a multifaceted educational intervention using scenarios, personal reflection and peer support with small groups of registered nurses (RNs). The intervention group showed a significant difference in mean speaking-up scores from baseline to post-test ($p < .0001$), with no significant change in control group scores. Fleit et al (60) aimed to raise medical students' awareness of speaking-up processes and handling of concerns about mistreatment by faculty members during clinical placements. An educational programme was implemented reinforcing behavioural expectations of all participants in the learning environment, in addition to a system for anonymously reporting and ensuring timely response to concerns raised. Students' awareness of relevant policies and procedures for reporting concerns increased to almost 100% from a pre-implementation baseline of 67%. Public humiliation and public embarrassment, which were the most commonly reported mistreatment behaviours, declined considerably. However, fear of reprisal following reporting of mistreatment remained a major concern for students.

Ineffective interventions

Delisle et al's (34) 'Crucial Conversations' curriculum for undergraduate medical and healthcare students aimed to 'promote psychological safety' (p.778) during inter-professional conversations, where students had to ask for help, or admit errors. However, the 'most noteworthy finding' (p.782) was the lack of significant improvement in students' negative attitudes towards such inter-professional conversations. Raemer et al's (30) 50 minute 'conversational skills' workshop for anaesthesiologists consisted of interactive presentations and a speaking-up role-play exercise. These resulted in no statistically significant differences between intervention and control group, leading to a conclusion that 'speaking-up behaviours are deeply rooted and difficult to change, at least with education alone' (p.534).

Indeterminate: interventions that were partially effective.

Most of the interventions reviewed could not be categorised as being entirely effective or ineffective. For example, Balasubramian et al (54) evaluated a staff forum introduced for team members to speak-up safely. The intervention was unsuccessful in 7 of 25 case study sites. In each unsuccessful case, a key leader, primarily the physician or practice manager refused to relinquish control of the meeting agenda, and/or suppressed discussion that was critical of practice. As a result, team members abandoned attempts to speak-up. Fears of belittlement by practice leaders was another factor why team members refused to speak-up. In contrast, where physicians engaged with the improvement project and encouraged discussions within teams, staff were more likely to report improved speaking-up. Similarly, Pannick et al (53) introduced a structured team briefing policy on hospital wards to encourage teams to speak-up about clinical and administrative challenges. The approach fostered confidence that the team would not embarrass, judge or punish those who spoke-up, and junior clinicians found speaking-up cathartic. However, this sense of confidence was severely limited by disputes about the legitimacy of certain concerns, or an implicit understanding that certain areas of concern were deemed off-limits, such as scrutinising the performance of any one team member.

A survey following the introduction of a surgical checklist (44) found that nurses and anesthesiologists were significantly ($p=.05$) more likely to feel empowered to speak-up to team members with concerns regarding patient safety. However, survey participants indicated that they had not experienced barriers to speaking-up in the operating room, whereas several barriers were later discussed during qualitative interviews. These included the issue of intimidation within teams and that checklists were only deployed when surgeons were supportive of the intervention's introduction. Amiri et al (32) similarly addressed medical hierarchies that prevented nurses in Iran from speaking-up. Empowerment workshops delivered to nurses (with specific content on speaking-up) resulted in significant improvements in the experimental group's overall patient safety culture score and in the safety culture dimension "communication openness" (both $p<0.001$). However, dimensions such as "frequency of events reported" and perceptions of "non-punitive response to errors" showed no significant difference.

Oliver et al (58) implemented a classroom educational programme to support social work students to speak-up to more senior staff during clinical placements. In addition to didactic teaching sessions, role-playing and reflection, a wallet-sized prompt card guided students through a six-step approach to 'Difficult Conversations'. Quantitative and qualitative findings captured how students felt better prepared to undertake difficult conversations in clinical practice. Although the prompt card was considered useful, the six-step approach was evaluated as being too difficult to implement in practice.

An "Ethical Action Exercise" made it compulsory for US medical students to speak-up during clinical clerkships 'to try to correct, resolve or improve one situation' (23: p.602). Although all students completed the exercise, 86% found speaking-up to be difficult and 12 students reported negative reactions. The morality of requiring students to speak-up and steps taken to protect students are inadequately discussed by the authors who, somewhat ironically, were academic leaders of a compulsory bioethics course being undertaken by the students.

Medical students were also the focus of Roh et al's (59) study in the Republic of Korea. A classroom-based patient safety teaching programme was implemented, with content relating to speaking-up. Teaching strategies included interactive lectures with demonstrations, role playing and debriefing. Pre-intervention, students described having little confidence in speaking-up about errors made by senior doctors. Following training, students reported increased self-confidence in speaking-up about colleagues' errors, but low confidence continued when speaking-up about senior doctors' errors. Similar results were reported in a study of nursing students in the USA (52), with significant improvements in speaking-up confidence, but no significant differences in perceptions of the difficulty in speaking-up to those with more authority. Perceptions of hierarchy as a barrier to speaking-up were markedly resistant to educational change.

Hierarchy was also a focus of O'Connor et al's (45) training intervention to encourage medical interns to speak-up to senior medical staff about patient safety concerns. Training consisted of lectures in human factors, error and communication techniques adapted from aviation and interactive discussion

with four attending physicians who reflected on the challenges of speaking-up they experienced as interns. Post-training scores demonstrated a significant improvement in knowledge and attitudes to speaking-up to seniors, although there were no significant differences between pre- and post-training groups. No effect was found on behaviour whether 'on the job or in a similarly simulated environment' (p.8). A significant limitation is that speak-up behaviours were evaluated post-implementation when breaking bad news to patients/family members, even though this appears to have not been explicitly addressed during training and has several important differences to speaking-up to colleagues.

Speaking-up in U.S. hospitals participating in a state-level CLABSI (central-line associated blood stream infection) prevention initiative was the focus of Robins & McAlearney (68). Hospitals achieving optimal CLABSI outcomes were identified as fostering several and varied inter-disciplinary opportunities for team members to safely speak-up about patient care, quality, and safety. Hospitals with inferior CLABSI outcomes provided few opportunities for speaking-up, with a non-collaborative learning culture described as interrogative and a barrier to speaking-up. A further factor encouraging speaking-up, was when physicians were perceived by team-members, especially nurses, as being in favour of the intervention, a finding that echoes studies reviewed earlier (44,53,54).

A similarly large scale study (63) was undertaken to improve workplace culture and speaking-up in 10 US hospitals. Interventions, including workshops and online resources for sharing experiences resulted in significant changes to culture scores ($p<0.05$) across all hospitals when compared to baseline. However, four of the 10 hospitals experienced no statistically significant changes, or marked qualitative changes in culture. Staff in improving hospitals described not being 'afraid to speak-up' (p.7), while staff in non-improving hospital feared getting 'in trouble for it' (p.7). The six hospitals with substantial culture change also had greater decreases in mean risk-standardised mortality rates, compared to hospitals with no culture change.

Several studies (38,39,41,42,69) reported improved speaking-up between senior leaders and ward staff following implementation of Executive WalkRounds™ (EWRs). First introduced in the USA by the Institute for Healthcare Improvement (IHI) in the early 2000s, EWRs are intended to provide a structured opportunity for staff to directly communicate concerns during executive visits to clinical areas. Executives should then demonstrate their commitment to a culture of safety by ensuring concerns are addressed. However, problems in ensuring fidelity to the IHI model have been reported (57), with studies being unclear on any local deviations from the IHI recommendations for implementation. One UK study (57) discuss how such implementation deviations resulted in EWRs becoming more about checking-up, rather than listening to staff concerns.

Nevertheless, an evaluation of EWR in two US hospitals found improved safety culture scores post-implementation (39). Although changes in safety culture scores were not significant, several items relevant to speaking-up improved significantly, such as 'easily discussing errors' and 'feeling encouraged by colleagues to report safety concerns'. Two further studies (38,42) report similar positive findings, although the absence of a pre-implementation baseline is a limitation. Nevertheless, some results (42) are strengthened by the collection of data over six years, showing a marked increase from 30% to 90.5% of EWR participants agreeing with the question 'has your reporting of incidents increased?'. That 96% of the issues raised were resolved lends further support to the claims of a successful implementation, as does the finding that 73% of issues elicited through EWRs were unidentified through other methods of error detection, such as incident reporting. However, a number of studies (40,56,61) discuss inadequate executive responses during implementation of EWRs. Crucially, poor responses to concerns by executives proved deeply problematic for frontline staff, who cited executives' lack of respect for concerns (56) and meaningful connection with staff (61) as undermining the culture of safety.

Results 2: Synthesis of themes emerging from the results

To summarise, a large number of small-scale studies reported inconclusive results. Furthermore, no specific characteristics of interventions and implementation approaches were associated with more

positive implementation outcomes. The heterogeneous nature of interventions and outcomes measured contributed significantly to this. In terms of intervention characteristics, in those studies reporting only positive outcomes several involved interventions targeting multi-disciplinary team-working (43,46,67,70,71). Notable others have reported that enrolling different occupational types, or specialities, during implementation decision making is positively associated with successful implementation (72).

At this juncture, we follow the recommendations of Fulop et al (73) to explore *interdependencies* between intervention, implementation approach/es and outcomes, 'allowing insights into the 'black box' of implementation' (p.2). The following section, therefore, presents a thematic analysis of researchers' explanations of why, or how, their speak-up interventions were implemented successfully (or not), before we consider cross-study commonalities in the studies reviewed and lessons for health policy and researchers.

Thematic overview of factors impacting on the implementation of interventions

Undertaking thematic analysis within a narrative review entails working with and reflecting directly the main ideas and conclusions *across* studies (9). Thematic analysis provided a useful way of organising and summarising overlaps in researchers' explanations of implementation processes and outcomes in the diverse set of papers reviewed. These will now be discussed under the following themes; (1) hierarchical, interdisciplinary and cultural relationships and (2) psychological safety.

Theme 1: Workplace culture: hierarchical and interdisciplinary factors and the implementation of speak-up interventions

Definitions of workplace culture routinely refer to an organisation's hierarchical form(s); its division of labour by organizational locations, departments, units, etc.; the sets of roles and jobs, job tasks and technologies used (74) . It is widely accepted, therefore, that any attempt at nurturing a culture of workplace openness has to take into account wider organisational and social factors therein, including the interrelated issues of workplace histories, power, norms and hierarchies (7). Indeed,

implementation of speak-up interventions were often explained by researchers as being contingent on the enduring and mostly adverse influence of pre-existing workplace cultures, hierarchies and interdisciplinary tensions. Balasubramanian et al (54) described how lead physicians and office managers, accustomed to chairing and managing team meetings, refused to relinquish control of meetings to subordinate team members during the implementation of workshops designed to encourage discussion of practice problems. As a result, team members who attempted to introduce discussion in a less hierarchically mediated way eventually 'gave up in the face of this tag team opposition' (p.428). Even in teams where lead physicians encouraged team-led discussion, the discussion of problems that might be perceived as encroaching into a physician's territory were proscribed. Similar interdisciplinary and hierarchical tensions were described by others (53), who explained that regardless of 'a general sense that 'things had changed for the better' (p.5), deeply rooted hierarchical and cross-disciplinary tensions remained. These were identified as implementation barriers not only in 'lower fidelity implementation' (p.2) teams, but also where there was 'greatest fidelity' (p.3). Hierarchical tensions resulted in certain clinical concerns remaining off-limits, such as clinicians' performance, as well as managers and board members questioning the legitimacy of concerns raised by front-line staff.

A further hierarchical issue identified as both an enabler and barrier to successful implementation of speak-up initiatives was the perceived support of medical leaders for the intervention (43,44,47,53–55). For example, Robbins and McAlearney (55) described how nurses were more likely to implement a "speaking-up" intervention when physicians 'clearly valued and encouraged this input' (p.1227). Ironically, entrenched inter-professional, hierarchical and cultural attitudes within organisations seemed to be insoluble barriers to the successful implementation of interventions designed to tackle such attitudes.

Although workplace cultures and hierarchies were often invoked as contextual explanations for unsuccessful implementation and intervention outcomes, researchers rarely considered pre-existing societal, cultural and hierarchical issues at any stage of their projects. There were, however, two

notable exceptions. Roh et al (59) described how Korean national culture was an insurmountable barrier to medical students speaking-up about senior doctors' transgressions. National cultural norms strongly reinforced workplace hierarchies where 'less powerful people expect their superior to tell them what to do, with dependency on many formal rules or informal customs' (p.913). Unsurprisingly, low confidence in speaking-up to seniors persisted amongst students despite the educational intervention, possibly resulting from students 'feeling confused or even shocked' (p.913) as implementation of the educational package challenged long-standing national cultural norms. Similarly, Oliver et al (58) acknowledged that their educational programme had not clearly reflected how 'structural inequalities faced by students of non-hegemonic identities influenced the difficulty of speaking-up' (p.707). As one student commented, 'I am a racialized young woman, and a difficult conversation is just different for me than it is for a cisgendered white male' (p.707).

There is a dearth of literature focussing on the influence of wider societal intolerances, such as racism or homophobia on speaking-up within healthcare and other sectors. This is particularly relevant given that social awareness of barriers to speaking-up have recently been heightened due to international social justice movements such as "Black Lives Matter", "#metoo" and "The everyday sexism project". With the exception of the two studies discussed above, researchers largely position workplace cultures as existing in isolation to broader societal culture.

Although of little consolation, not taking into account the potential for dynamic interplay between the wider socio-economic-political system and the local setting (e.g. institutional or team level factors) is a known limitation of many studies and systematic reviews (75,76). Furthermore, Bonello et al (77), writing in this journal, call for more consideration of national cultural dimensions in health policy and management literature. The conclude that organisational cultures exist at a relatively superficial level and that national cultures have a greater impact on policy implementation and innovation, but that national culture is 'often overlooked' (p.1064). We wholeheartedly agree that the impact of national cultures in policy implementation requires further scrutiny, but not at the expense of understanding local cultures. Furthermore, healthcare teams often consist of workers from multiple-ethnic and cultural backgrounds, however the question of speaking up within culturally diverse teams and the

interaction with national policy is also under-researched at present. We also suggest the need to look beyond national boundaries to raise awareness of the increasing influence of international/globalised cultural awareness movements, such as #metoo and Black Lives Matter.

We also acknowledge that constructing and conveying an understanding of both national and international factors alongside complex and dynamic local healthcare environments can be arduous and demanding (29). However, not representing this level of interconnectivity can threaten the future transferability of research findings and of policy recommendations. As a result, future research and reviews should, wherever possible, provide detailed descriptions of the context/s and setting/s in which studies are carried out, also acknowledging the potential for "setting-context interplay", all of which would yield more useful studies for policy makers through a better understanding of the limits to the applicability of the results.

Theme 2: Psychological safety and the implementation of speak-up interventions

Psychological safety is an important and conceptually sound construct often cited within health policy (78) and the organisational learning literature, defined as 'a sense of confidence that the team will not embarrass, reject, or punish someone for speaking-up', stemming 'from mutual respect and trust among team members' (p.354). A prevailing concept, or "theory-of-change", across the studies reviewed was that the implementation of speak-up interventions would enhance psychological safety resulting in more staff raising concerns (30,34,39,41–43,46,48,53,60). However, not all studies proceeded to report the direct effects of their interventions on psychological safety and speaking-up. Of those that did (39,41,53,54), the majority reported improved psychological safety in terms of colleagues' confidence to speak-up, others had little effect (30) or more variable success (31).

The results of some studies also expose a more intricate relationship between psychological safety and mutual respect. For example, ensuring or enhancing mutual respect between workplace colleagues is a prerequisite of psychological safety (78), which, unsurprisingly, was regularly targeted by many interventions. However, mutual collegial respect requires close monitoring as it can sometimes unintentionally evolve into a barrier to speaking up. For example, where respect evolved into

deference to colleagues, based on long-standing professional-hierarchical norms or national socio-cultural norms (30,43,44,47,53–55,58,59,63).

Several interventions further reinforced current understanding of psychological safety. Negative repercussions were reported when interventions created an expectation of mutual respect amongst staff, only for this not to materialise. This was particularly apparent in the Executive Ward Round (EWR) literature (24-26) where promises to respond to the concerns of frontline employees were subsequently broken by executives. This failure of mutual respect negatively impacted organizational climate and dampened employees' willingness to participate in subsequent interventions. To summarise, we do not question that psychological safety and related values such as mutual respect are fundamentally important in optimising conditions for speaking-up in the workplace. However, those designing and implementing interventions to enhance psychological safety need to be cognisant of a fine line between mutual respect and less helpful deference between colleagues, and the difficulties of finding the "sweet-spot" of neither too much, nor too little, mutual respect.

3. Summary and Conclusions

This review demonstrates that healthcare researchers internationally are attempting to address difficulties associated with speaking-up in healthcare. A range of research designs, academic and professional disciplines and perspectives informed the studies, including medicine, nursing, social work, human factors, sociology and psychology. However, some significant limitations were identified across the papers reviewed. For example, there was very little evidence of researchers critically reviewing extant studies when preparing and designing new projects, with many of the flaws of previous study designs being overlooked and previous findings were seldom built upon. Similarly, researchers rarely placed their findings within existing local, national or trans-national policies, resulting in missed opportunities to directly contribute to and influence policy implementation.

That very few studies declared or acknowledged research funding may explain why the body of knowledge is disparate rather than accumulative, and that study designs were mostly small scale and implemented locally. Relatively poorly funded research can also result in implementation studies that

often fall short of truly understanding how socio-professional systems work in the context of complex practices (1). This is evident in many of the papers reviewed, which reflect implicit mechanistic or cognitive-rationalist assumptions about the nature of speaking-up. For example, researchers consistently overlooked how otherwise well-conceived individual components of training interventions (such as improved communication skills) are often usurped in practice by complex inter-relationships between training components and contextual issues, such as pre-existing socio-cultural relationships, workplace hierarchies and perceptions of speaking-up. As a result of our review being informed by complex systems thinking perspectives, Figure 1 presents a more nuanced, iterative and intersectional view of the implementation of speak-up interventions, which takes into account pre-existing and entrenched social and work-place barriers to speaking-up. An intersectional approach refers to the complex ways in which multiple issues (such as race, gender, cultural norms) routinely interact to influence everyday experiences of people receiving and working within health (79)

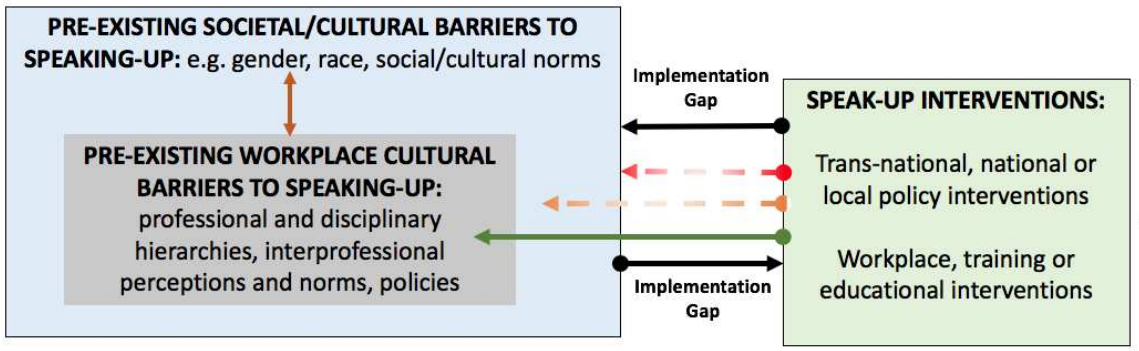


Figure 1: An iterative model of the intersectionality of pre-existing workplace and societal barriers and their effects on speak-up interventions: this model takes into account the intersectionality of pre-existing societal and workplace culture which forms a formidable barrier (black arrows) to the implementation of speak-up interventions in practice. Some interventions successfully bridge the gap (green arrow), others bridge but the effect is variable or weak (weakening amber arrow) and others fail to bridge the gap (red arrow).

We accept that there are few certainties within the complex realities of modern healthcare practices (80), however a significant theme in the literature is the global pervasiveness and dominance of workplace cultures that were inimical to speaking-up interventions. Implementing interventions that support speaking-up was reported as immensely challenging work in the USA, Korea, Iran, Canada and England. Regardless of location, healthcare researchers and policymakers who are interested in

improving employee speaking-up will have to grapple with pre-existing yet complex societal and workplace norms which are local and global, emergent and long-standing in nature.

Recent reviews of speaking-up and the related concepts of psychological safety and safety voice (18–20) have contributed much to understanding the efficacy and effectiveness of interventions in this area. Our narrative review further enhances this understanding by being the first to locate the evidence within a broader health systems and policy context, and adopting a complex systems perspective currently lacking within systematic review literature (23). Doing so results in a better understanding of speaking-up as having emergent and dynamic properties within a "messy" system, rather than fixed entities within stable properties. For example, we problematise certain aspects of psychological safety left unexplored in other reviews (19), in particular we discuss the concept of mutual respect and how the closely related issue of deference can be a significant barrier to speaking-up. Furthermore, our outlining of the complex interplays between societal/cultural values and norms, and their effects on organisational cultures and speak-up interventions complements and extends Noort and colleagues' (20) conceptualisation of safety voice as an ecological phenomenon.

Limitations of our review include that additional academic papers may have been published during the long process of peer reviewing and publication of this article. Although the literature reviewed was broadly international most studies were conducted in higher income Westernised countries, and the factors influencing speaking-up may be different in Lower- and Middle-Income Countries (LMIC). Similarly, all of the papers reviewed were published in English language journals, potentially excluding studies published in other languages. Finally, reviews of the literature are limited to their search strategy and we may have missed relevant studies that used different sets of terms, or different words, in the title or abstract.

Because the act of speaking-up is greater than the sum of its individual parts, the future design and implementation of speak-up interventions will have to take into account these cumulative and intersecting factors. Nevertheless, the findings reviewed here will help policymakers and researchers to understand better what works, how and why, in developing a future health workforce that speaks-

up when witnessing sub-optimal or transgressive practices. We recommend that future developments to ensure a workforce that is better prepared to speak-up are based on a meaningful collaboration between a range of stakeholders from diverse cultural backgrounds and workplaces, including researchers, policy makers, service-users and practitioners. One enabler of meaningful collaborative working is adequate research and development funding to properly resource various stakeholders, meetings and equipment. Commonly, the studies reviewed was undertaken with little or no research funding. Therefore, we also recommend, that speaking-up research (and related engagement and research impact activities) be prioritised in the allocation of research funding, to best ensure that meaningful collaborations result in well-designed interventions and changes to existing damaging practices.

Recommendations for future research include the need to consolidate and build on existing knowledge and to better situate studies within complex local, national and international policy contexts and culturally diverse workforces. In addition, more studies of speaking-up in healthcare within LMIC would address a significant gap in the literature and provide better understanding and solutions to meet the demands therein. Our review can facilitate closer working and the implementation of new policies as it surfaces conditions which may negatively impact, or even counter, efforts to create more open speak-up healthcare cultures. However, there is unlikely to be a one-size-fits-all approach to creating such a culture and the challenge remains to produce research and policy that can contribute to better, as well as more open workplaces.

Wordcount 6323

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TRANS-NATIONAL POLICY INTERVENTIONS	NATIONAL POLICY INTERVENTIONS	LOCAL/WORKPLACE POLICY INTERVENTIONS
European Commission Whistleblowing Legislation European Convention On Human Rights	NHS England Raising Concerns Policy Introduction of 'Freedom to Speak-up Guardians' in NHS England UK wide professional standards and regulatory guidance on raising concerns in the form of e.g. codes of conduct for nursing, dentistry, allied health professionals and medicine.	"Speak-up" hotlines; standard operating procedures for responding to concerns; executive walk rounds; speak-up training and staff induction courses.

Table 1: Examples of some of the overlapping transnational, national and local workplace policy initiatives for employee speaking up operating within NHS england

KEYWORD SEARCH TERMS	INCLUSION & EXCLUSION CRITERIA
1. Speak*-up OR "Speak* up" AND employee* OR staff OR student* AND train*OR teach* OR educat* OR evaluat* OR implement*	**Inclusion criteria:** English language journal articles published 2008-2018 inclusive, reporting any empirical research on interventions designed to promote speaking-

OR interven* OR tools OR strateg* OR "pilot test*" OR "pilot-test*" 2. Whistle-blow* OR Whistleblow* OR whistle 3. "raising concerns" OR "raise concerns" 4. "employ* voice" 5. "voice concerns" or "voicing concerns" Databases used: Medline, PsychINFO, EMBASE, Social Policy and Practice, ASSIA and Web of Science	up, improve teamwork, communication or work culture where speaking-up was identified as an outcome. **Exclusion criteria:** editorials, reviews, theoretical papers, methodological papers, discussion papers and anything not published in English. Books, book chapters, theses, conference papers and any empirical papers; all of the above excluded where there were no data reported.

TABLE 2: Keyword search terms deployed and inclusion exclusion criteria

TYPE OF INTERVENTION	METHODOLOGY			TOTAL
	Quantitative	Qualitative	Mixed-methods	
Educational initiatives - speak-up learning interventions undertaken within universities with undergraduate students.	3 - Delisle et al.(34); Dywer & Faber-Langendoen (36); Kent et al (52)	0	2- Oliver et al. (58) ; Roh et al. (59) ;	**5**
Workplace initiatives: interventions undertaken within workplaces not involving formal	6- Thomas et al.(37); Zimmerman et al (38); Frankel et al (39); Tucker and	5- Pannick et al.(53); Balasubramanian et al.(54); Robbins & McAlearney (55);	1- Benning et al (61)	**12**

training or educational input.	Singer (40); Pronovost et al (41); Lim et al (42)	Rotteau et al (56); Martin et al (57);		
Workplace/workforce training initiatives: mostly voluntary, occasionally mandatory enrolment of employees onto formal training courses, often involving simulated practices and/or team-working interventions.	14 - Raemer et al.(30); Weiss et al.(31); Amiri et al. (32); Sayre et al(33); Johnson & Kimsey(35); Gupta et al.(43); Columbus et al.(44); O'Connor et al. (45); Hughes et al. (46); Ginsburg & Bain(47); Hanson(48); Stewart-Parker et al.(49); Pian-Smith et al.(50); Savage et al (51)	0	3 - Fleit et al(60); White et al (62) ; Curry et al (63)	**17**
TOTAL	**23**	**5**	**6**	**34**

TABLE 3: Overview of research design approaches by type of intervention

Contextual factors	**Individual factors**	**Perceptions of "psychological safety" and futility**
National, regional & unit-level policies (facilitators); interdisciplinary working (facilitators and barriers); team structures and relationships (barriers)	Confidence and previous speak-up experiences (barriers and facilitators); communication skills (facilitators); assertiveness (barriers)	Hierarchy and leadership attitudes (barriers); fear of repercussions and conflict (barriers); lack of organisational response & change (barriers); respect (facilitator); deference (barriers)

TABLE 4: Overview of barriers and facilitators to speaking-up identified in the literature