

Patient Safety Huddles to Improve Teamwork and Communication: Frontline Staff Perspectives

*Jane Montague¹, Kate Crosswaite², Muhammad Faisal², Eileen McDonach³, Mohammed A Mohammed⁴, Rebecca Randell⁵, Alison Cracknell⁶, Alison Lovatt⁷, Beverley Slater⁸

1. Assistant Professor in Health Studies, Faculty of Health Studies, University of Bradford, Bradford, UK.

2. Research Fellow, Faculty of Health Studies, University of Bradford, Bradford, UK.

3. Evaluation Programme Lead, Salford Royal NHS Foundation Trust Manchester, England, United Kingdom.

4. Professor of Healthcare Quality & Effectiveness, Faculty of Health Studies, University of Bradford, Bradford, UK.

5. Professor of Digital Innovations in Healthcare, Faculty of Health Studies, University of Bradford, Bradford, UK.

6. Consultant Physician, St James's University Hospital, Leeds Teaching Hospitals Trust, Leeds, UK.

7. Director of Nursing, The Improvement Academy, Bradford Institute for Health Research, Bradford, UK.

8. Improvement Academy Director, The Improvement Academy, Bradford Institute for Health Research, Bradford, UK.

ARTICLE INFO	ABSTRACT
<p>Article type:</p>	<p>Introduction: The Patient Safety Huddle (PSH) is a daily brief multidisciplinary meeting to discuss patient safety threats and actions to mitigate risk. This paper reports on frontline staff perspectives from five UK hospitals across three National Health Service (NHS) trusts (provider organizations) on the impact of PSHs on communication and teamwork. Perspectives were collected at two points – before and after PSHs had been embedded.</p>
<p>Article History: Received: Accepted:</p>	<p>Material and Methods: Frontline teams from 25 wards were invited to complete a paper-based Evaluation Survey. In the first survey, 21 wards participated, generating 137 responses, and in the second survey, five wards participated, eliciting 32 responses. Additional group interviews with five ward teams were conducted (n=19 participants).</p>
<p>Key words: Patient safety; Interdisciplinary Communication; Patient Care Team; Interprofessional Relations</p>	<p>Results: PSHs improved teamwork and communication, both in terms of quality and quantity. The evaluation survey reported improved teamwork (108/137 answered positively) and communication (121/137). In facilitating a non-hierarchical, easily accessible, and fear-free space for discussing patients at risk of harm, the PSH was perceived as engendering a supportive environment for all staff and contributing to an enhanced safety culture.</p>
	<p>Conclusion: Patient Safety Huddles – at both pre and post-embedded stages – were perceived as improving communication and teamwork, resulting in a safe and collegiate environment that facilitates successful information sharing, improved multidisciplinary working, and the development of collective situational awareness. These factors may contribute to enhanced patient safety and quality of care.</p>
<p>► Please cite this paper as: Montague J, Crosswaite K, Faisal M, McDonach E, A Mohammed M, Randell R, Cracknell A, Lovatt A, Slater B. Patient Safety Huddles to Improve Teamwork and Communication: Frontline Staff Perspectives. <i>Journal of Patient Safety and Quality Improvement</i>. 2023; 11(4): 189-197. Doi: 10.22038/PSJ. 2023.74386.1402</p>	

*Corresponding author:

Assistant Professor in Health Studies, Faculty of Health Studies, University of Bradford, Bradford, UK. E-mail: J.Montague@bradford.ac.uk

Introduction

Avoidable patient harm remains an international healthcare problem (1,2). On average, patient safety events occur for roughly 8% of United Kingdom (UK) National Health Service (NHS) patients (3).

English NHS organizations, for example, reported 1,991,797 patient safety occurrences between October 2017 and September 2018. It was a 5.1% increase on the previous year. It will likely increase due to the recent pandemic and the resulting pressure on the NHS. In response, there have been increasing attempts to lessen harmful incidents through quality improvement and patient safety initiatives (4).

One such initiative is the patient safety huddle (PSH), a brief multidisciplinary meeting involving patient safety discussions and actions to mitigate identified risks (3,5). PSHs intend to improve situational awareness of patient safety fears on the hospital ward in actual time, thereby decreasing harmful events.

They are inspired by the methods utilized by High-Reliability Organizations (HROs) such as the aviation and nuclear industries (6). PSHs are reported as relatively low-cost intervention initiatives that are versatile and have beneficial patient safety outcomes. (1,7,8). Evidence suggests that the high rates of unintended patient harm can often be attributed to a failure to communicate effectively between healthcare professionals (9-12). Simple, uncomplicated, and effective communication is important in complex healthcare settings. Barriers to effective communication have been identified, including a need for standardized communication approaches, established hierarchies or 'power distance', and authoritarian leadership (11,12).

Weller et al. suggest that practical and organizational factors, such as staff's simple differential geographical locations, contribute to poor communication (13).

This paper reports on the perspectives of frontline staff from five hospitals across three UK NHS trusts (provider

organizations) on the impact of PSHs on communication and teamwork. Perspectives were collected at two points – before and after PSHs had been embedded. PSHs enhanced teamwork and communication in terms of quality and quantity.

An important facilitating factor in this was the fear-free open space they created for all staff to speak up about concerns. A strength of this study is that it was conducted across three NHS trusts in five hospitals, increasing confidence in the generalisability of the findings. As far as we know, this is the first study to appraise the implementation of PSHs before and after they became embedded into practice, providing insight into possible longer-term impacts of PSH.

Materials and Methods

The Huddle UP for Safer Healthcare (HUSH) project came after a successful pilot that implemented PSHs on eight wards at Leeds Teaching Hospitals NHS Trust (14)).

PSHs were to be scaled up by the HUSH team in 136 inpatient wards in three NHS Yorkshire and Humber Trusts. However, this number was eventually revised due to ward mergers, closures, and exclusions, resulting in the evaluation of 92 wards (see Appendix A). The definition offered by the HUSH team of their specific PSH was "...a 'vehicle' for daily, brief, frontline, non-hierarchical, multidisciplinary, focussed discussion of a specific patient harm, led by senior clinical management² and supported by quality improvement skills, coaching, data visualization, and feedback." (14).

This original description was based on initial observations from eight pilot wards.

The operational characteristics – identified by the HUSH team following observations of the eight pilot wards - of a PSH were as follows:

1. It takes place at the same venue and time every day;
2. It is led by the most senior³ clinician;
3. It includes a review of the number of days since the last harm;
4. It includes a review of an improvement run chart⁴;

²This was later amended: senior clinical management not necessary to lead (see Montague et al. 2019)

³Over time, this was amended to the 'most appropriate' clinician

⁴Characteristics (3) and (4) (reviews of days since the last harm and improvement run charts) were eventually merged to become a single characteristic.

5. It includes a de-brief of any harm since the last huddle;
6. It includes a discussion of who is at risk today and what needs to be put in place;
7. Participants are asked if anyone has any other concerns;
8. It is short and sweet ($\leq 0-15$ minutes); and
9. It is a non-judgemental and fear-free space (14).

A multi-method Developmental Evaluation (19, 20) – considered especially suitable for complex healthcare settings - was undertaken to appraise the implementation, fidelity, return on investment, effectiveness, and learning from the scaling up PSHs. Data was obtained from multiple methods (surveys, ward reports, routine harm data, observations, and group interviews; see Appendix B), and ‘HUSH Evaluation Dress Rehearsals’ were developed and delivered for the evaluation and implementation teams.

These facilitated an environment of shared learning and enabled both teams to discuss issues and progress as they arose. Such an approach meant that there was a process for regular feedback between the HUSH team and the evaluators.

In this paper, we focus on the data collected from frontline teams regarding their experiences of huddles, and specifically on teamwork and communication.

Frontline teams from 25 wards (a sample purposely selected according to hospital, specialty, and cohort) were asked to respond to a paper-based evaluation Survey (Appendix C) on the experience of their wards of PSHs. The survey was conducted at two points- before and after the ‘embedding’ of the PSH.

A ward was considered embedded if it had held 15 PSHs in <21 days. Embedding PSHs on a ward had a meantime, based on the Stages of Implementation Checklist (SIC), of 19.6 weeks – within the predicted time of 24 weeks (range 1-86 weeks).

The time it took individual hospitals to embed varied, ranging from 18 to 48 weeks (see Appendix D).

At the point of the second survey, only five wards satisfied these criteria; they were invited for both pre-embedded and post-embedded data collection.

The first survey comprised participation from 21 wards, resulting in 137 responses; the second survey, five (of the 21 wards), elicited 32 responses. A spreadsheet was utilized to collate responses. Responses to each question were analysed for frequency, and cross-tabulation was used to interrogate responses by specialty and trust. Text answers – where provided - were thematically coded, and theme frequency was quantitatively analysed (repeat theme occurrences).

Ethical consideration:

The Chair of the University of Bradford Biomedical, Natural, Physical and Health Sciences Research Ethics Panel granted ethics approval in March 2016 (EC2230). Each Trust Research and Development Department confirmed in March 2016 that it was a ‘service review or evaluation’ by March 2016 and that NHS ethical review was not required. Ward access was obtained using written permissions and honorary contracts. Funding for this project came from the UK Health Foundation’s first round of a scaling-up call.

Results

In the first survey, 21 wards participated, generating 137 responses. Five (of the 21) wards participated in the second survey, generating 32 responses.

The evaluation survey (Appendix C) – a combination of open and closed questions – elicited respondents’ views on the PSH’s effect on their work. Respondents – to varying degrees - considered that the PSH had improved safety culture and lowered harms. The highest positive responses, however, were to the questions on improvements in communication and teamwork (Table 1).

Table 1: Frontline team perspectives on the impact of PSHs on communication and teamwork

Question	Response Option	Number of responses to the first survey (n=137*)	Number of responses to the second survey (n=32)
Has the PSH reduced harm on your ward?	Yes	64 (47%)	12 (37.5%)
	No	8 (6%)	1 (3%)
	Do not know	59 (43%)	19 (59%)
Has the PSH improved communication with colleagues?	Yes	121 (88%)	31 (97%)
	No	11 (8%)	1 (3%)
Has the PSH improved teamwork in your area?	Yes	108 (79%)	27 (84%)
	No	23 (17%)	4 (12.5%)
Has the PSH improved the safety culture?	Yes	103 (75%)	-
	No	20 (15%)	-
	Do not know	1 (0.7%)	-
As a result of the PSH, do you feel that you understand safety issues:	More	110 (80%)	27 (84%)
	About the same	22 (16%)	5 (16%)
	Less	-	-
As a result of the PSH, are ward staff more open about discussing safety issues:	More	96 (70%)	24 (75%)
	About the same	35 (25.5%)	8 (25%)
	Less	1 (0.7%)	-

*NB * results reported do not include missing data.*

In answers to the open question 'What do you think has been the main impact of PSHs?' staff (n=122 out of the 137 respondents at first survey) responses included 'raising awareness or concerns and being informed' (31%=38/122 of respondents); 'improvements in teamwork and the multidisciplinary team (MDT) approach' (15.5% =19/122), and 'improvements in communication' (11%=14/122). One respondent, for example, stated: "Although the safety huddles are just beginning to become established, I feel that they will formalise some of the informal discussions that already take place. I think that the safety huddles have helped to fast track some patient reviews and have improved escalation concerns or clinical

deviations from normal." P125

Improvements in communication and teamwork were consistently articulated in response to more generic questions on the experience of the PSH. For example, in response to the open question: "What is the main thing you have learned from PSHs?" more than one-third of those who answered the question, 35% (34/96), reported that they had learned about the importance of better communication and teamwork. One respondent stated:

"I feel it provides better communication on the unit. Everyone feels informed and is aware more of the surrounding patients' needs, also plans for the shift." P156

In response to the open question, "What do you like most about PSHs?", 35% of those

who answered the question (37/109) said they liked that the PSH contributed to team-building. This question received 28 answers in the second survey, of which almost one-third (29%=8/28) especially valued the teamwork and inclusiveness of the PSH. The quality and frequency of communication were valued, particularly as it pertained to caring for patients. Staff felt that because of the huddle, everyone knew and shared the plan for patients at risk of harm and that patient care could be prioritized. It enhanced awareness and, consequently, safety culture.

Improvements in communication:

Most respondents (88% = 121/137) reported improved communication. In response to the question on how colleague communications had improved (first survey, n=101), respondents reported that it had done so as a consequence of enhanced multidisciplinary working on the ward (24%=24/101), followed by better management of the workload (13%=13/101); and greater raising of concerns and issues (13%=13/101)

“It pulls the team together daily, so it has made us communicate better with each other” P107

“listening to each other’s input.... has helped us to gel as a team” P13

“staff are prompted to share any concerns/issues they have with others thus enabling

such issues/problems to be tracked by the MDT instead of just one individual” P37

The huddle resulted in a much more streamlined handover process:

“You are only handing over information to one group in one session rather than having to communicate with lots of different professionals.” P39

Twenty-seven responses to this question were received during the second survey. Most responses (26%=7/27) addressed how PSHs enabled better communication across multidisciplinary teams, followed by how improved communication led to staff being better able to support the prioritization of patients and their care (22%=6/27).

“It has allowed us to identify problems earlier. It helps with communication with families when we are all singing off the same hymn sheet.” P39

“staff are not frightened to speak up; even clinical support workers communicate concerns; they are extremely valuable as they can be the ones with the most contact” P115

An important element of improved communication was how PSHs made staff feel more able to speak out about safety worries. A greater number felt slightly or more confident speaking out about patient safety concerns due to PSHs (71%=93/131 at survey one and 59%=19/32 at survey two). The responses are included in Table 2.

Table 2: Summary of responses to speaking out about safety concerns

Question	Response Options	Number of responses in	Number of responses in the second survey (n=32)
Do you feel more able to speak out about safety concerns as a result of PSHs?	A lot more	58 (42%)	10 (31%)
	Slightly more	35 (25.5%)	9 (28%)
	About the same	38 (28%)	13 (41%)

*NB *missing data not included in reported results*

Respondents reported that PSHs ensured that an increased quantity and quality of communication occurred (18.5% of respondents (5/27). For example, respondents stated that:

“Nurses can talk directly, for example, to

physios, pain team, at the start of the shift. Instant result then as they can see your patient straight away and already be able to provide answers to any queries you may have.” P143

“Everyone is given the information and is

made aware of situations that could escalate. It makes the team more efficient and professional” P177

Changed and improved communication led to increased information sharing about patients and additional and new communication channels between and within teams. In the latter case, this was acknowledged as facilitating both simple aspects – knowing other team members’ names – and more complex ones, such as discussions about patient safety and discharge and referral processes. Greater communication between professionals, including non-clinical staff, was highlighted, and it was observed that the huddle provided a distinct multidisciplinary forum not available elsewhere. Opportunities existed to build new relationships and strengthen existing ones, especially across boundaries and hierarchies. The perception was that this led to an advantageous, more open environment. Additionally, the structured space led to fast and efficient communication: without the huddle, information would need to be elicited via phone calls, meetings, and/or information seeking.

Improvements in teamwork

In response to the question asking how teamwork has improved on the wards, there were 86 responses (first survey). Twenty-seven percent (=23/86) considered that improvements were a result of better communication, enhanced cooperation, improved coordination of care (15%=13/86), and improved knowledge sharing (13%=11/86). Staff spoke of how multidisciplinary working ensured more successful cooperation between professionals and teams and that this led to increased quality of care for patients and a supportive environment for staff:

“[team] members work more co-operatively when caring for patients and are able to help each other more effectively.” P39

“All team members are involved, and all views are listened to and respected” P4

“[This ward] is a big unit which is very busy; at times (in the past), you may not have known what was happening at the other side of the unit. The huddles have helped bring the team together at set points of the day to make everyone aware of what is happening, for example, a confused patient or someone struggling with a busy patient. [It] promotes teamwork.” P13

Most of those who responded to the second survey (n= 23: (61%=14/23) considered that teamwork had improved directly because of the PSHs’ role in facilitating support for and between team members. It then raised staff morale:

“that it boosts morale to look at the unit’s safety on a daily/shift basis as part of a team. It gives a feeling of belonging and makes you aware of all patients on the unit.” P48

“team building improves morale and an open reporting environment benefits everyone.” P39

Overall, a majority of staff – across professions, specialisms, and professional boundaries - felt that the huddle had led to wider teamwork and improvements in teamwork. The huddle comprised all staff on the ward - clinical and non-clinical - and this was very much welcomed.

Little variation in this view was found in analysing the responses by specialism and profession. Surgical wards were marginally more likely to report improved communication and teamwork, as were nursing and non-clinical staff – but the firm view from all staff was that teamwork and communication are improved. Table 3 reports selected questions by ward specialty.

Table 3: Results for selected questions by ward speciality

Question	Medical wards(n=37)	Surgical wards(n=36)	Other wards(n=58)
	answering 'yes'	answering 'yes'	answering 'yes'
Has the PSH improved communication with colleagues?	30 (81%)	34 (94%)	51 (88%)
Has the PSH improved teamwork in your area?	26 (70%)	28 (78%)	49 (84%)

A more positive response came from non-clinical, nursing, and other staff than from doctors. The most positive about the role of the PSH in improving communication with

colleagues were non-clinical staff, 91% (=30/33) of whom answered 'yes' to this question. Table 4 shows results for selected questions by professional roles.

Table 4: Results for selected questions by professional role

Question	Doctors (n=14)	Nursing staff (n=83)	Non-clinical staff (n=33)	Allied healthcare professionals (n=8)
	answering 'yes'	answering 'yes'	answering 'yes'	answering 'yes'
Has the PSH improved communication with colleagues?	12 (86%)	73 (88%)	30 (91%)	7 (87.5%)
Has the PSH improved teamwork in your area?	10 (71%)	68 (82%)	27 (82%)	7 (87.5%)

The fact that there is little variation in perspective on how the PSH improves communication and teamwork reflects its propensity to enhance team cohesion. The open environment and flattened hierarchy enable staff to communicate easily within and across professions and, consequently, to work more successfully as a team.

Discussion

This paper has reported on how PSHs affect communication and teamwork. In assessing the impact and effectiveness of the PSH, the HUSH evaluation team sought to elicit frontline team members' perspectives on their experience of the PSH both before and after it was embedded into practice.

Strong emergent themes comprised changes and improvements in communication and teamwork. It was perceived as positive and as contributing to an enhanced safety culture. Staff valued the change in the nature and frequency of communication that huddles produced. Teamwork was also perceived as having improved: there was a perception that multidisciplinary working improved, enhancing the working experience of staff and, consequently, the quality of care of patients. In facilitating an easily accessible and safe space for discussing patients at risk of harm, the PSH was perceived as engendering a supportive environment for all staff. These findings are echoed in other studies (5,15-18). Improved communication because of huddles leads to increased

information sharing among ward teams and opens new communication channels with other healthcare professionals. Goldenhar et al. (2013), Provost et al. (2015), and Stapley et al. (2021), for example, all report on how the regular structured nature of the huddles avoids the need for staff to seek answers or clarification via phone calls and emails later. Standardized tools enable every huddle member to contribute or speak up relatively easily (19).

As Provost et al. (2015) suggest, huddles enhance relationships, and familiarity facilitates discussions that might once have been taboo. Increased familiarity makes it more difficult for individuals to dismiss concerns and/or ignore requests from other health professionals (5,23)

Improvements in teamwork have also been found. The huddle improves collaboration between healthcare professionals – clinical and non-clinical and of differential status - and facilitates shared understandings (5,17, 18). There was little difference in the perspectives on teamwork improvements between differential professional roles and different ward teams.

As Goldenhar et al. (2013) suggest in their study, a collective mindset or 'peer connectivity' is developed in contrast to what once might have been a fragmented and hierarchical working environment. It enables a more equitable environment where trust is improved and a sense of community and belonging is fostered (20,21).

As a result, individuals are familiar with each other in a way not usually experienced and are more likely to communicate effectively and respond positively to each other (5,17,18).

The overall effect is collective situational awareness and increased patient safety (15,16,20,21,22), observed by staff in this study. In other studies, it is important to maintain a commitment to the huddle (5, 23).

Limitations

A possible study limitation is that HUSH was one of a number of quality improvement initiatives in process at the hospitals at the time, so these other initiatives may have confounded the project outcomes. It is not unusual, however, for huddles to be one of a series of measures in programs for patient safety. (24). A second limitation is that only five of the 21 wards responding to the evaluation survey had embedded during the second survey.

This was because of the variable pace of scaling up and ward moves, mergers, and closures within the original plan. Other research has explored factors that support and constrain the embedding of PSHs into practice (25).

A final limitation concerns the close working and provision of feedback between the implementation team and the evaluation team as part of the process of Developmental Evaluation. The evaluation should be considered part of the intervention, and outcomes may have been confounded. Familiarity between teams and the evaluation team may have impacted responses.

Conclusion

In complex healthcare environments, ensuring successful communication and teamwork may enhance patient care (19). In this study, PSHs were perceived as improving communication and teamwork, and this was perceived as facilitating and enhancing patient safety.

Staff perceived PSHs as a safe and collegiate environment in which to speak up, resulting in successful information sharing, improved multidisciplinary working and the development of a collective situational awareness. These factors may consequently improve patient safety and quality of care.

Acknowledgment

This work was funded through The Health Foundation's Scaling Up Improvement Programme: Round One (2015). The Health Foundation provided direction for the HUSH evaluation through quarterly meetings but was not involved in the study design, data collection, analysis, or writing up.

References

1. Franklin BJ, Gandhi TK, Bates DW, Huancahuari N, Morris CA, Pearson M, et al. Impact of multidisciplinary team huddles on patient safety: a systematic review and proposed taxonomy. *BMJ quality & safety*. 2020;29(10): 1-2.
2. Reis CT, Paiva SG, Sousa P. The patient safety culture: a systematic review by characteristics of Hospital Survey on Patient Safety Culture dimensions. *Int J Qual Health Care*. 2018; 30(9): 660-77.
3. improvement n. NRLS National Patient Safety Incident Reports: Commentary. 2019.
4. Vincent C, Amalberti R. Safety in healthcare is a moving target. *BMJ Quality & Safety*. 2015; 24(9):539-40.
5. Goldenhar LM, Brady PW, Sutcliffe KM, Muething SE. Huddling for high reliability and situation awareness. *BMJ quality & safety*. 2013; 22(11):899-906.
6. Weick KE, Sutcliffe KM, Obstfeld D. Organizing for high reliability: processes of collective mindfulness. 2008. p. 31-66.
7. Sikka R KK, Sacks L. *How Every Hospital Should Start the Day*. 2014.
8. Larsen D, Peters H, Keast J. Using real time patient feedback to introduce safety changes: Debra Larsen and colleagues describe how the use of a process based on the 'plan, do, study, act' model has raised staff morale and improved care. *Nursing management (Harrow, London, England)*. 2011;18(6):27-31.
9. Burgener AM. Enhancing Communication to Improve Patient Safety and to Increase Patient Satisfaction. *Health Care Manag (Frederick)*. 2017;36(3):238-43.
10. Gluyas H. Effective communication and teamwork promotes patient safety. *Nurs Stand*. 2015;29(49):50-7.
11. Leonard M, Graham S, Bonacum D. The human factor: the critical importance of effective teamwork and communication in providing safe care. *Qual Saf Health Care*. 2004;13 Suppl 1(Suppl 1):i85-90.
12. Weller J, Boyd M, Cumin D. Teams, tribes and patient safety: overcoming barriers to effective teamwork in healthcare. *Postgrad Med J*. 2014; 90(1061):149-54.

13. Dingley C, Daugherty K, Derieg MK, Persing R. Advances in Patient Safety Improving Patient Safety Through Provider Communication Strategy Enhancements. In: Henriksen K, Battles JB, Keyes MA, Grady ML, editors. *Advances in Patient Safety: New Directions and Alternative Approaches (Vol 3: Performance and Tools)*. Rockville (MD): Agency for Healthcare Research and Quality (US); 2008.
14. Crosswaite K FM, Craig J, Marsh C, McDonach E, Mohammed MA. Final Report of the Evaluation of the Huddling Up for Safer Healthcare (HUSH) Scaling Up Project. 2018.
15. Mullan PC, Macias CG, Hsu D, Alam S, Patel B. A novel briefing checklist at shift handoff in an emergency department improves situational awareness and safety event identification. *Pediatr Emerg Care*. 2015;31(4):231-8.
16. Newman RE, Bingler MA, Bauer PN, Lee BR, Mann KJ. Rates of ICU Transfers After a Scheduled Night-Shift Interprofessional Huddle. *Hosp Pediatr*. 2016;6(4):234-42.
17. Provost SM, Lanham HJ, Leykum LK, McDaniel RR, Pugh J. Health care huddles Managing complexity to achieve high reliability. *Health Care Management Review*. 2015;40(1):2-12.
18. Pannick S, Archer S, Johnston MJ, Beveridge I, Long SJ, Athanasiou T, et al. Translating concerns into action: a detailed qualitative evaluation of an interdisciplinary intervention on medical wards. *BMJ Open*. 2017;7(4):e014401.
19. Martin HA, Czurzynski SM. Situation, Background, Assessment, and Recommendation – Guided Huddles Improve Communication and Teamwork in the Emergency Department. *Journal of emergency nursing*. 2015;41(6):484-8.
20. yan S, Ward M, Vaughan D, Murray B, Zena M, O'Connor T, et al. Do safety briefings improve patient safety in the acute hospital setting? A systematic review. *J Adv Nurs*. 2019; 75(10): 2085-98.
21. Venkataraman A, Conn R, L Cotton R, Abraham S, Banaghan M, Callaghan B. Perspectives of Multidisciplinary Staff toward the Improvement of Communication and Patient Safety by Safety Huddles. *Journal of Patient Safety & Quality Improvement*. 2018;6(1):644-9.
22. Pimentel CB, Snow AL, Carnes SL, Shah NR, Loup JR, Vallejo-Luces TM, et al. Huddles and their effectiveness at the frontlines of clinical care: a scoping review. *J Gen Intern Med*. 2021;36(9):2772-83.
23. Cooper RL, Meara ME. The organizational huddle process--optimum results through collaboration. *Health Care Manag (Frederick)*. 2002;21(2):12-6.
24. Stockmeier C CC. Daily Check-In for Safety : From Best Practice to Common Practice. 2010.
25. Montague J, Crosswaite K, Lamming L, Cracknell A, Lovatt A, Mohammed MA. Sustaining the commitment to patient safety huddles: insights from eight acute hospital ward teams. *British journal of nursing (Mark Allen Publishing)*. 2019;28(20):1316-24.