

SBAR (Situation, Background, Assessment, Recommendation) - An exploration of transfer of learning to clinical workplace

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Abstract

Introduction

Failure to handover is a major preventable cause of patient harm and is principally due to poor communication. Situation, Background, Assessment, and Recommendation (SBAR) provides a consistent and concise framework to communicate patient information and has shown to improve patient handover. The objective of this study was to investigate whether handover skills using the SBAR framework acquired through practicing handover during managing an unwell patient in hi fidelity simulated environment are transferred to the clinical environment.

Methods

A prospective educational study was designed. 12 participants' clinical handover were audio recorded before and 4 weeks after high fidelity simulation training on the SBAR tool. Evaluation of the handover was done using a standardised scoring system. A baseline survey was also conducted to determine the trainee's prior knowledge and use of SBAR.

Results

The results demonstrated an overall improvement post intervention which was not statistically significant. Maximum improvement was noted in the background aspect of the SBAR framework (70% to 85%). The trainees who improved most were those who scored less than 50% in their pre teaching scores, with an improvement of over 25% in the post teaching scores. Although there was an overall improvement, it was not statistically significant with Z- statistic approximation to Wilcoxon signed rank test = - 1.483 and p-value = 0.160.

Discussion

We believe that our study has demonstrated that downstream transfer of learning of communication skills using SBAR in the simulation setting to the clinical workplace can be achieved.

Introduction

Handover is best defined as 'transfer of professional responsibility and accountability for some or all aspects of care for a patient, or group of patients, to another person or professional group on a temporary or permanent basis'¹. Breakdown in effective handover is a major preventable cause of patient harm and is principally due to poor communication and systemic error¹. According to JCAHO (Joint Commission on Accreditation of Healthcare Organisations), the root cause of sentinel events in 2013 and 2014 was communication in 63.4% and 62.9% of events respectively². Adverse events have been directly linked to inadequate handover practices^e. The SBAR (Situation, Background, Assessment, and

Recommendation) is a communication tool, which provides a succinct and predictable structure to the delivery of a message from one team to another³

SBAR can be taught using Simulation Based Medical Education (SBME). Horwitz et al reported increase in perceived comfort with providing handover after one-hour teaching which included facilitated discussion and observed individual practice with feedback⁴. Further, McCrory et al showed that teaching SBAR in didactic session improves inclusion and timeliness of essential information in simulated critical patient handovers by pediatric interns⁵. Similarly Tews et al reported improvements in both the ability to apply SBAR to simulated case presentations and retention at a follow-up following 1- hour didactic session⁶.

Above mentioned and other previous studies have demonstrated an improvement in handover using SBAR teaching with didactic sessions, role play, discussions and clinical vignettes⁶⁻⁷. Our aim in this study was to address if teaching SBAR in the simulated environment using high fidelity simulation translates to downstream behaviour change in the clinical environment resulting in better use of SBAR as a communication tool in actual paediatric handover. We assessed improvement in the use of SBAR in the clinical environment following teaching of SBAR using high fidelity simulation in our purpose built simulation facility.

Methods

Twelve junior doctors working in the department of paediatrics participated between April and December 2014. Following completion of MBBS, doctors in the UK undergo two years of foundation training which is denoted as FY1 and FY2. Doctors in paediatrics then undergo eight years of training and are denoted as ST1-8. One FY2 trainee and eleven ST1 - ST3 trainees participated in this study⁸.

The study used pre and post intervention design. Firstly, each participant was audio recorded while performing a handover of a patient in their clinical workplace. All candidates completed a survey questionnaire to ascertain their knowledge and experience about SBAR. Each participant was then invited to a SBAR teaching using high fidelity simulation. Candidates managed an unwell patient with opportunities for practicing handover embedded at 3 points in the scenario. Once during a phone conversation and twice during face to face encounters. Sessions took place in simulation facility at our institution which includes purpose built ward area and use of hi fidelity mannequins. Session was facilitated by simulation/ leadership fellows trained in running hi fidelity simulation scenarios and debriefing. This was followed by facilitated debriefing. Four weeks after the SBAR teaching a second audio recording of their handover in the clinical workplace was captured.

All the audio recordings were anonymized. Recordings were then individually reviewed and scored by two consultant paediatricians. Standard marking sheet to evaluate effective use of the SBAR tool was used (Appendix 1). This was adapted from an original checklist designed by Tews et al⁶. The checklist included critical performance steps for each stage of SBAR and each step was scored (see appendix for

details) with a binary score 0 or 1. The reviewers were blinded with regards to the timing of audio recording. 1 point was awarded to each item correctly presented for a total score out of 14.

Approval from the local research and development department was obtained and there was no need for ethical approval through the Ethics Committee following review by The NHS Health Research Authority.

Results

The survey results revealed that all trainees were aware of the SBAR as a handover tool and more than 50% trainees had received classroom based SBAR teaching. We used Wilcoxon signed-ranks tests to detect the difference in the pre and post intervention scores. Although not statistically significant results showed improvement in scores thus highlighting better use of SBAR in clinical environment following teaching in the simulated setting using hi fidelity simulation setting (Figure 1 and 2).

Figure 1

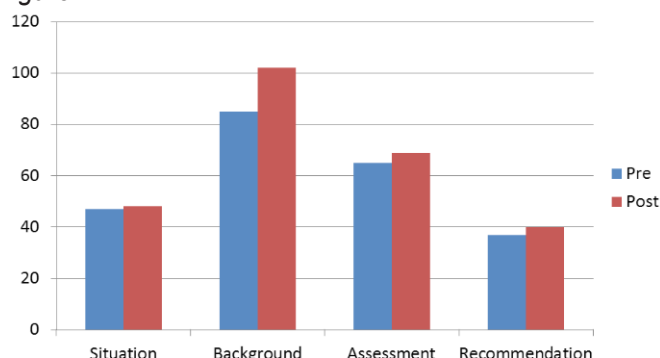
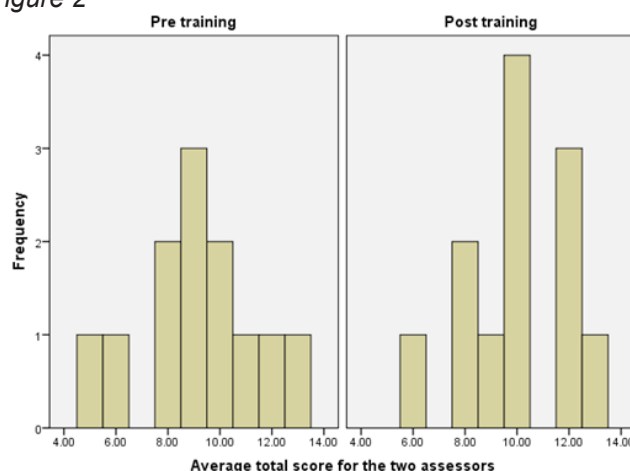


Figure 2



On comparing performance in the four aspects of the SBAR tool, the improvement in performance relating to providing background information was the maximum at 15% (70% to 85%) followed by the recommendation at 4.5% (51% to 55.5%) and assessment at 4% (from 67%

to 71%). There was limited improvement in the situation aspect with a change from 98% to 100%. Further analyzing the results, it was noted that trainees who already performed well (with score over 10 out of 14) did not demonstrate further improvement following the simulation teaching. However, those trainees who scored less than 50% (5 out of 12) in their scores pre simulation teaching, showed a large improvement of over 25% in the post teaching scores.

Although there was an overall improvement, there was no statistically significant difference in the SBAR performance pre and post hi fidelity simulation teaching with p value of 0.160.

Discussion

This study has demonstrated that SBAR teaching in the simulated setting using clinical scenario in real time lead to improvement of handover performance in the paediatric clinical environment using the SBAR tool which was not statistically significant. There was an improvement of 7.7% in total post teaching score.

Previous studies have demonstrated an improvement in performance following SBAR teaching using self-reported improvement of confidence levels⁴⁻⁶. Thompson et al demonstrated increased transfer of key clinical information during handover in recorded handovers after a 1-hour educational session on the use of ISBAR in handovers⁹.

To our knowledge all previous studies have addressed improvement in SBAR performance using didactic sessions, role play etc. We used hi fidelity simulation sessions with aim to transfer learning acquired in the simulation setting to the clinical environment. Examining the true impact of simulation based medical education on transfer to improved downstream patient care practices (T2) and improved patient and public health (T3) is challenging¹⁰⁻¹¹. Some T2 and T3 studies in the arena of technical skills have been published demonstrating improved practices and patient care¹². Draycott et al, 2008 have demonstrated improved neonatal outcomes following teaching of manoeuvres to deal with shoulder dystocia¹³.

Few T2 and T3 studies exist in the arena of teaching non-technical skills with only 9 studies identified in a review article on the teaching of Crisis Resource Management (CRM) skills¹⁴. Knudson et al, 2008 demonstrated a T3 outcome in their study where surgical residents were taught CRM skills in the simulated environment¹⁰.

All our trainees claimed to understand SBAR as a communication tool and over 50% of them reported classroom based teaching on this topic. Despite this, results revealed poor SBAR performance with 5 out of 12 trainees scoring less than 50% prior to simulation teaching. Liaw et al caution on the validity of self-reported confidence levels predicting clinical performance with a potential towards overestimation of self-confidence¹⁵.

Communication tools such as SBAR not only improve sharing of information amongst teams and team members but also help in ensuring that clear decisions are made. Hence the R aspect of the SBAR tool is very important. It was particularly worrying that all our trainees performed the worst on this aspect, with scores of less than 51% (37/72) and this did not improve post simulation teaching (55% (40/72)). It is difficult to explain why this was the case but we believe that this may be due to the inherent hierarchal relationship between junior and senior staff in healthcare. We believe that a cultural change may be needed to ensure better uptake and utilization of such tools.

Studies demonstrating improved performance of non-technical skills such as communication are harder to design and deliver, as valid and reliable assessment tools performance for soft skills do not exist. Review of 32 studies mainly observing handovers failed to understand at which stage communication failures occur and suggested examination of all steps of handover including pre and post-handover phases¹⁶. In addition, external factors which cannot be standardized can influence the performance of non-technical skills in the clinical environment. The lead researcher noted instances where, despite the trainee wanting to use the SBAR tool correctly, senior medical staff did not permit the completion of the SBAR process due to time limitations or other factors which may account for 3 trainees scoring poorly in the post teaching marks despite being taught in the simulation setting.

A limitation of this study was the small number of trainees which may have accounted for the lack of statistical significance. Further the SBAR tool we used has not been tested for reliability which may account for the difference of scores between our raters. However, evaluating SBAR training relying on a subjective assessment of SBAR performance may not be as robust as using a checklist tool.

Conclusion

Statistical significance was not achieved in the use of SBAR as a handover tool by teaching trainees in hi fidelity simulation setting. Our study also highlights the difficulties faced to achieve downstream transfer of learning of communication skills using SBAR in the simulation setting using hi fidelity simulation. Inability to achieve statistical significance could be due to small numbers and further research using larger numbers and reliable assessment tools may be required in the future.

Practice Points

1. SBAR teaching in the simulated setting leads to improvement of handover performance.
2. Studies demonstrating improved performance of non-technical skills such as communication are harder to design and deliver.

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