Enhanced training programme for nurses to improve effectiveness during resuscitation

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Andy Goh Ming Jin, Singapore General Hospital
Cindy Kwek Jun Hui, Singapore General Hospital
Adeline Wee Xiang Qing, Singapore General Hospital
Jai Vaishnavi D/O Jayakumar, SingHealth Alice Lee Institute of Advanced Nursing
Nur Adilah Binte Mohamad Nasir, Singapore General Hospital
Nur Liyana Binte Abdul Rahim, Singapore General Hospital

Background

Ward 68 is an isolation ward in SGH for patients requiring isolation precaution and room. It consists of 12 High Dependency (HD) beds and 39 general ward (GW) beds. The ratio of nurses to patients across both HD and GW in Ward 68 are 1:4. HD nurses are more familiar and competent in resuscitation compared to GW nurses. Hence, HD nurses are often required to assist GW nurses at critical situations to ensure early and smooth resuscitations. Interviews were conducted with GW nurses and most of them verbalised that they were unsure of their roles during resuscitation and lacked confidence in handling resuscitation effectively.

Mission Statement

To increase knowledge and skills of resuscitation in Ward 68 GW nurses to 80% within 10 months.

Analysis

The causes for poor performance of ward nurses were identified using the Cause & Effect Diagram (Fig. 1). The final root causes identified using multi-voting and Pareto Chart were:
1. Lack of Knowledge
2. Insufficient hands-on opportunity
3. No experience in resuscitation

In view of the 3 main root causes of poor resuscitation among the GW nurses, the team decided to set up a simulation resuscitation training (SRT) for GW nurses that is similar to a real resuscitation situation. 8 case scenarios were created based from past resuscitation events and printed as cards. The training is not conducted in a real resuscitation as it is not a predictable event and puts patient's safety at risk. In SRT, participants can be assessed on their skills and allowed to make mistakes as resuscitation will be conducted on a dummy.
GW nurses were required to participate in SRT when chosen. Only 3 nurses were selected for each SRT to provide more hands-on opportunity and to ensure that safety and needs of other patients will not be compromised.

Fig. 2 Bar chart showing percentage of items done correctly by GW nurses during skills assessment

SRT incorporates Roger's Experiential Learning Theory as it focuses on practical skills and objectives of the learners (Gaberson & Oermann, 2010). Learners are required to be actively involved in their learning and nurse educators will provide a training ground for the learners to practice (Marilyn, 2014). SRT also involves adult learning as GW nurses can acknowledge mistakes made during the simulation and learn the proper steps during discussions. It encourages GW nurses to adopt an eager learning attitude and to be critical thinkers, thus improving their knowledge.
Prior to introducing our training programme, our team did data collection to validate that there are issues with resuscitation among GW nurses. Based on the data collected using the skills assessment checklist (Fig. 2), it showed that only an average of 45.8% of the items were done correctly for 8 simulated case scenarios.

Interventions: Simulation Resuscitation Training Programme

The SRT programme was conducted over a period of 3 months from October to December 2016 for the GW staff nurses and enrolled nurses.

First Simulation

3 participants were briefed of the instructions prior to performing the simulation. After the briefing, participants filled up a questionnaire (Fig. 3) prior to the simulation to share their years of service, past resuscitation experience and confidence level.
The participants were required to item in the emergency trolley and perform their roles as per an actual resuscitation. One participant will randomly pick 1 out of 8 scenarios for the simulation. The participants were given time to read and prepare for the scenario. The first simulation was carried out with 15 minutes given to the team. One observer assessed the participants according to the skills assessment checklist (Fig. 4) to evaluate the competency of GW nurses in resuscitation. A project team member simulated the doctor's role in resuscitation.
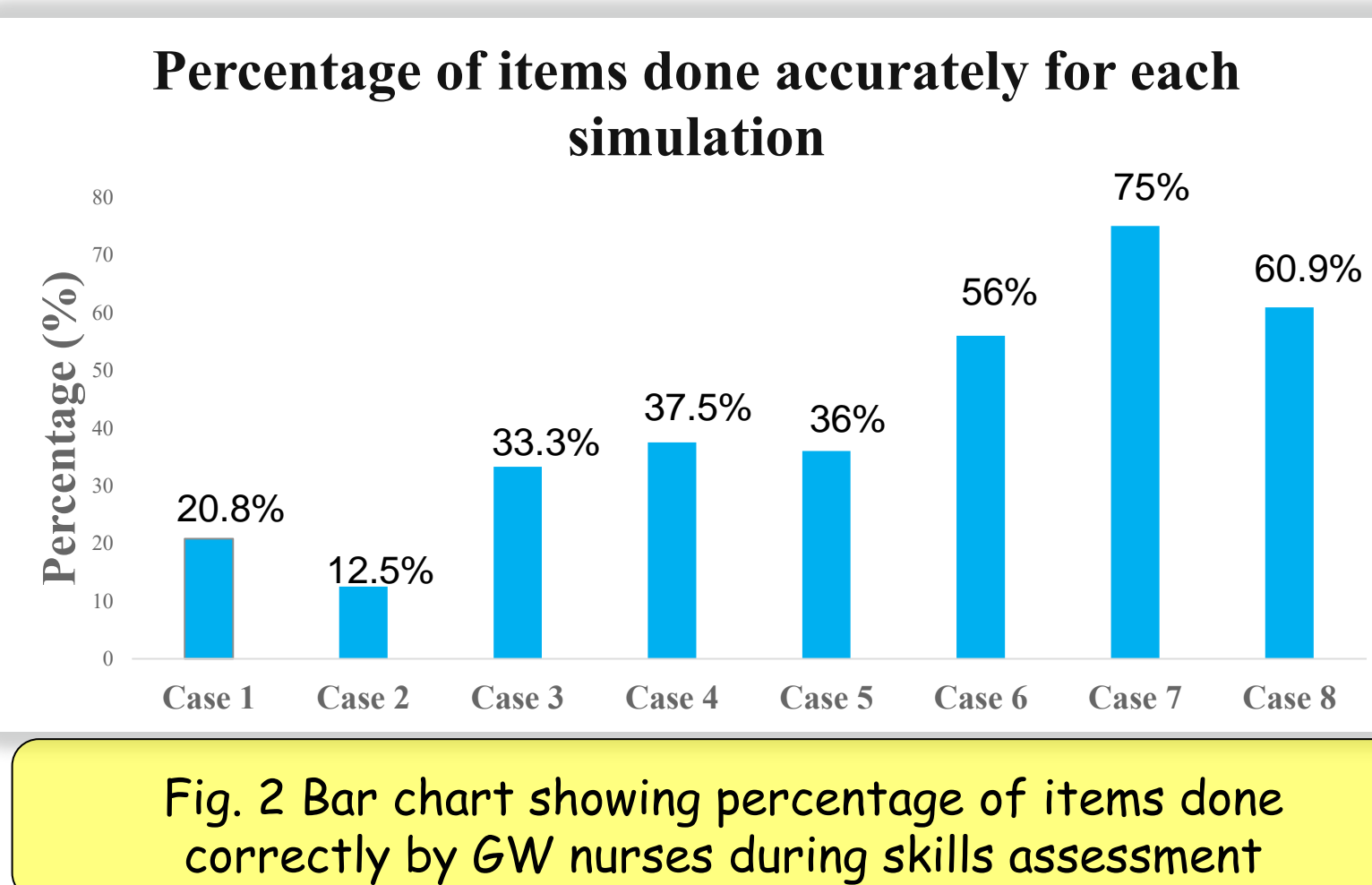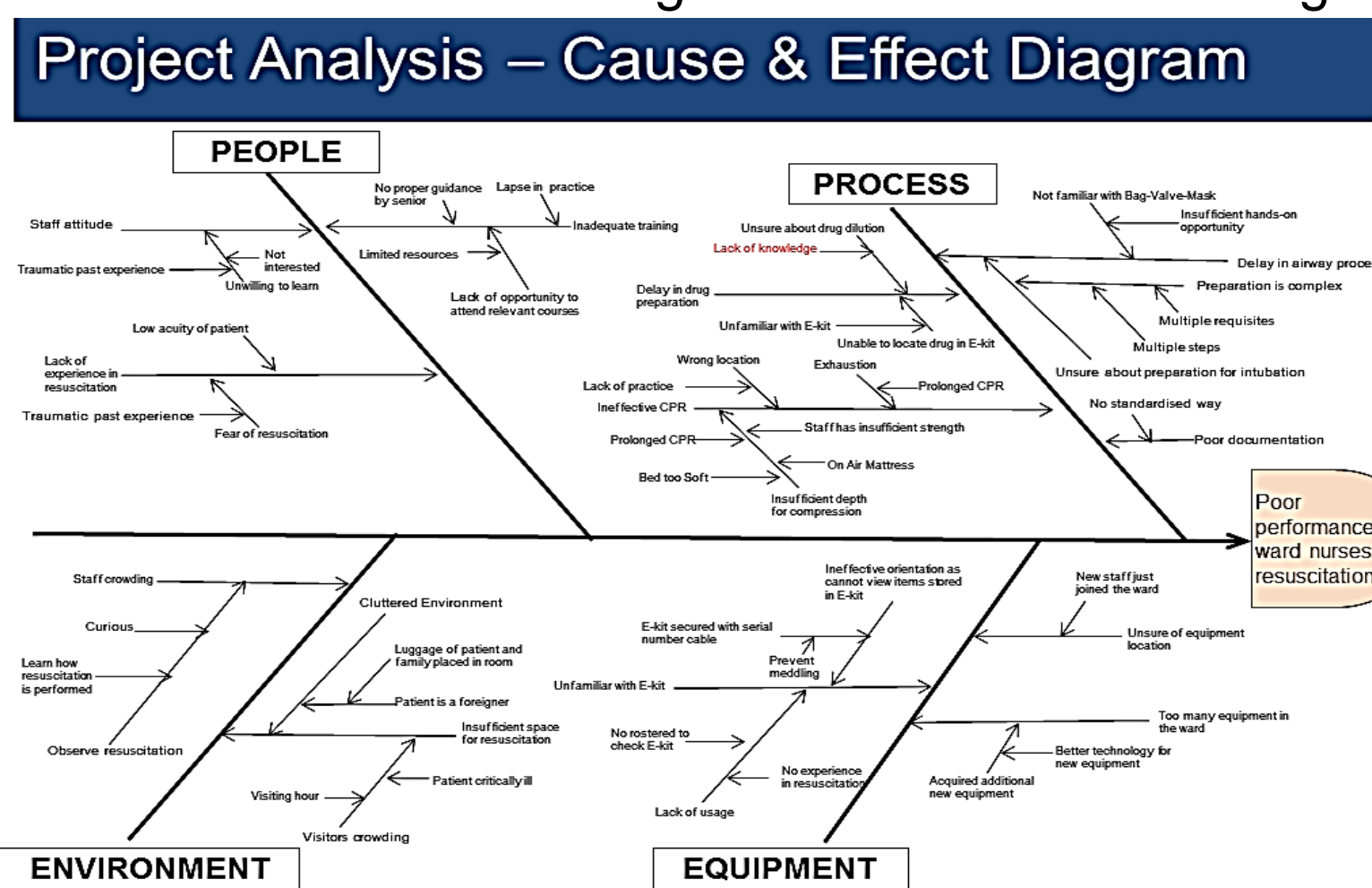

Fig. 3 Questionnaire used to understand the participants' background and experience in resuscitation

Fig. 4 Skills assessment checklist comprises the protocoled steps for resuscitation as per SGH's policy and procedure

First Debrief

After the simulated resuscitation (Fig. 5) a debriefing was conducted with all the participants. From the skills assessment checklist (Fig.4), we were able to determine areas where participants were unsure. Participants were asked to reflect and identify their strengths and weaknesses. After the reflection by participants, we discussed the areas that were performed well and areas for improvement. The participants were encouraged to clarify any doubts during the first debrief. Focused learning was achieved through exploration of areas to improve.
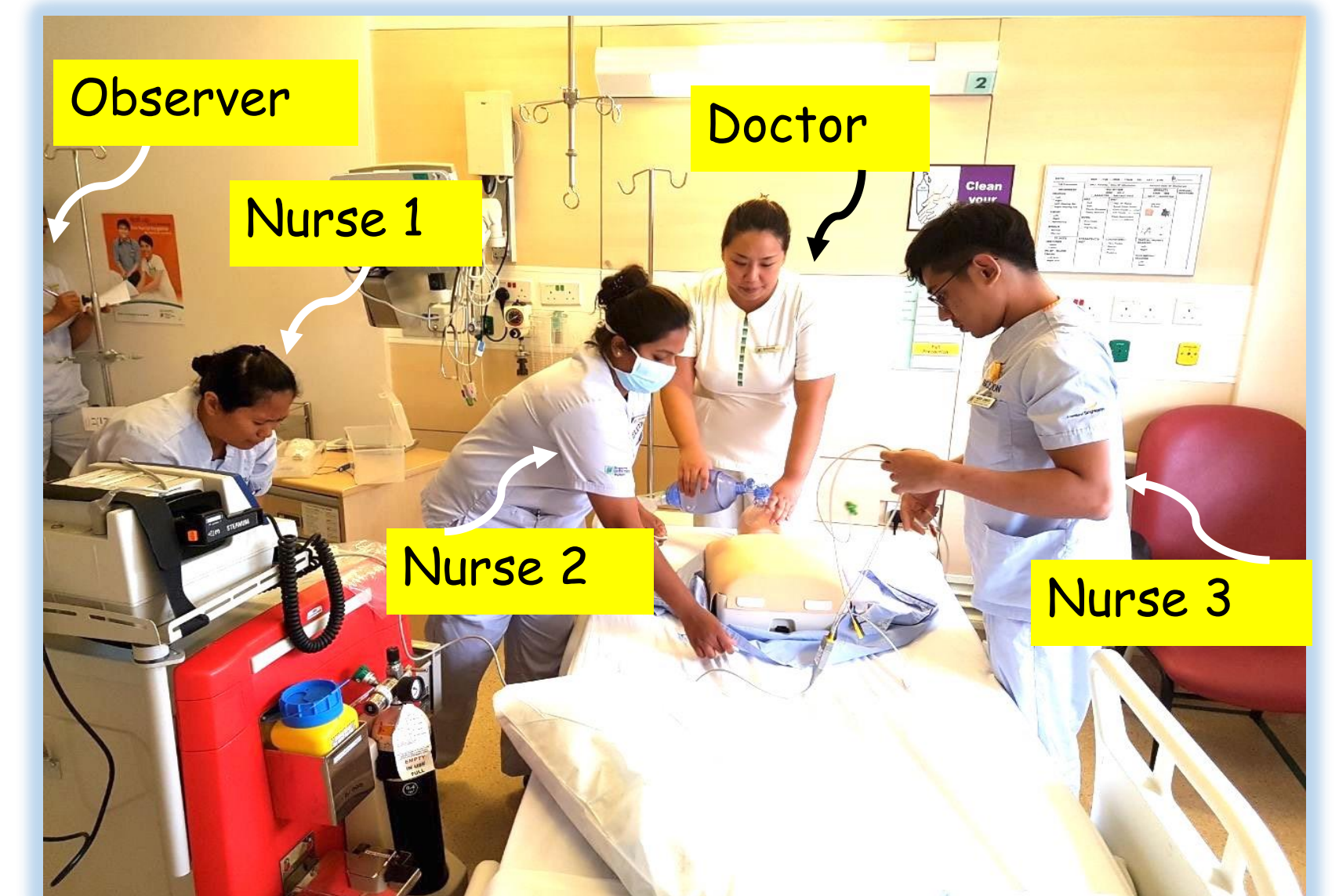

Fig. 5 Picture showing 3 GW nurses performing resuscitation simulation

The purpose of debriefing is to encourage self-learning through reflection and clarify any steps that they are unsure of. On top of that, it is to stimulate critical thinking and instill knowledge on resuscitation.

Second Simulation

The 3 participants were required to simulate resuscitation for the same scenario. They were re-assessed again using the skills assessment checklist (Fig. 4).

Second Debrief

Similar to the first debrief, learning points were highlighted and doubts were addressed. Also, it was discussed if objectives identified in the first debrief were met. Participants were requested to use the same questionnaire (Fig. 3) to rate their knowledge/skills in resuscitation after the SRT and to evaluate the training programme. This debrief summarised the overall experience and ended the resuscitation training on a positive note.
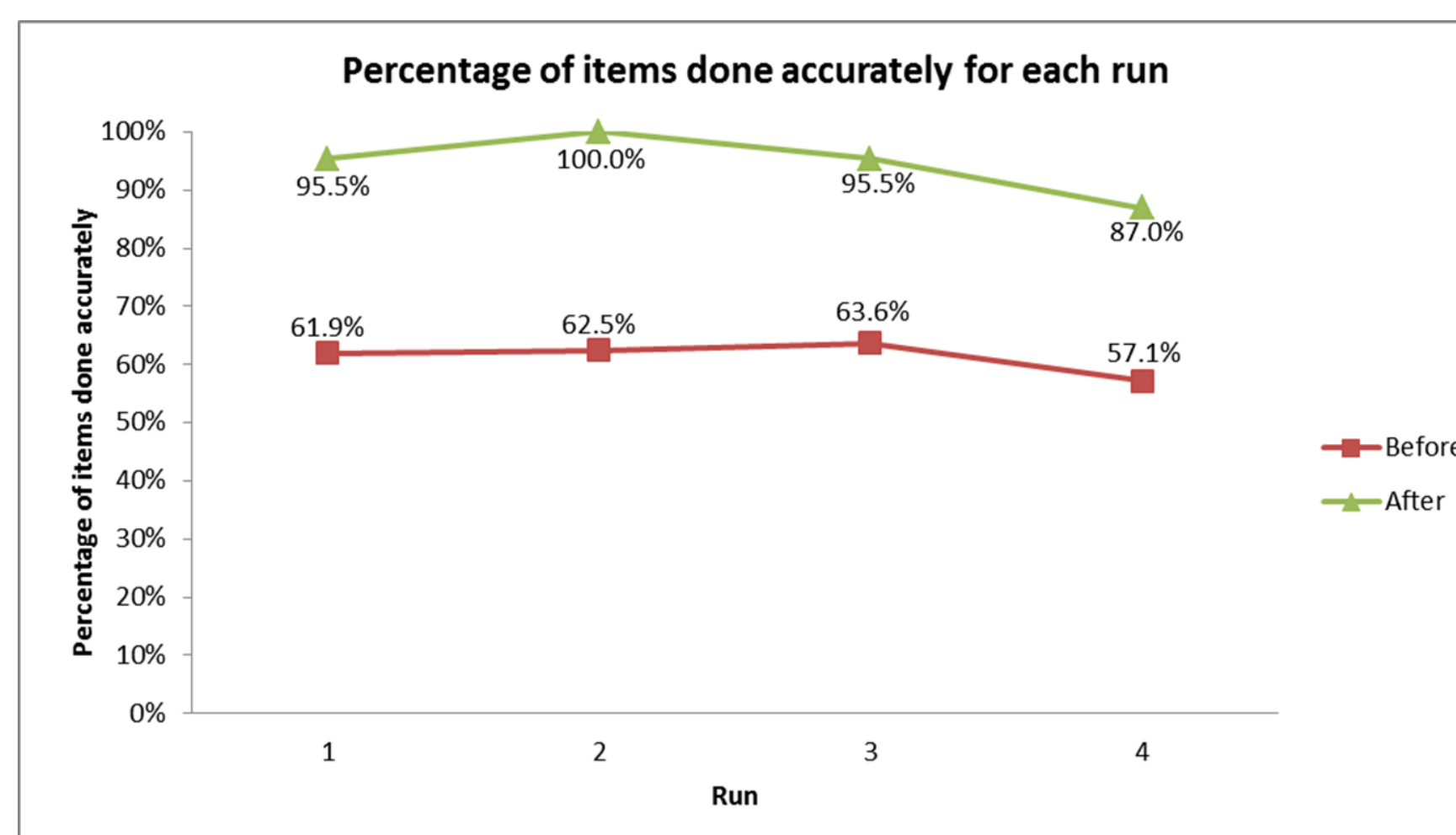
Results

Fig. 6 Comparison of performances between the first simulation and second simulation for 4 training sessions.

Paired t-test was done and the p-value of 0.003 is less than 0.05. Hence, the results are statistically significant indicating that there is sufficient evidence to suggest that the intervention has increased nurses' knowledge and skills at the 5% significance level. (Fig. 6).

Nurses consistently scored more than 80% for the second simulation, which met the aim of the project.
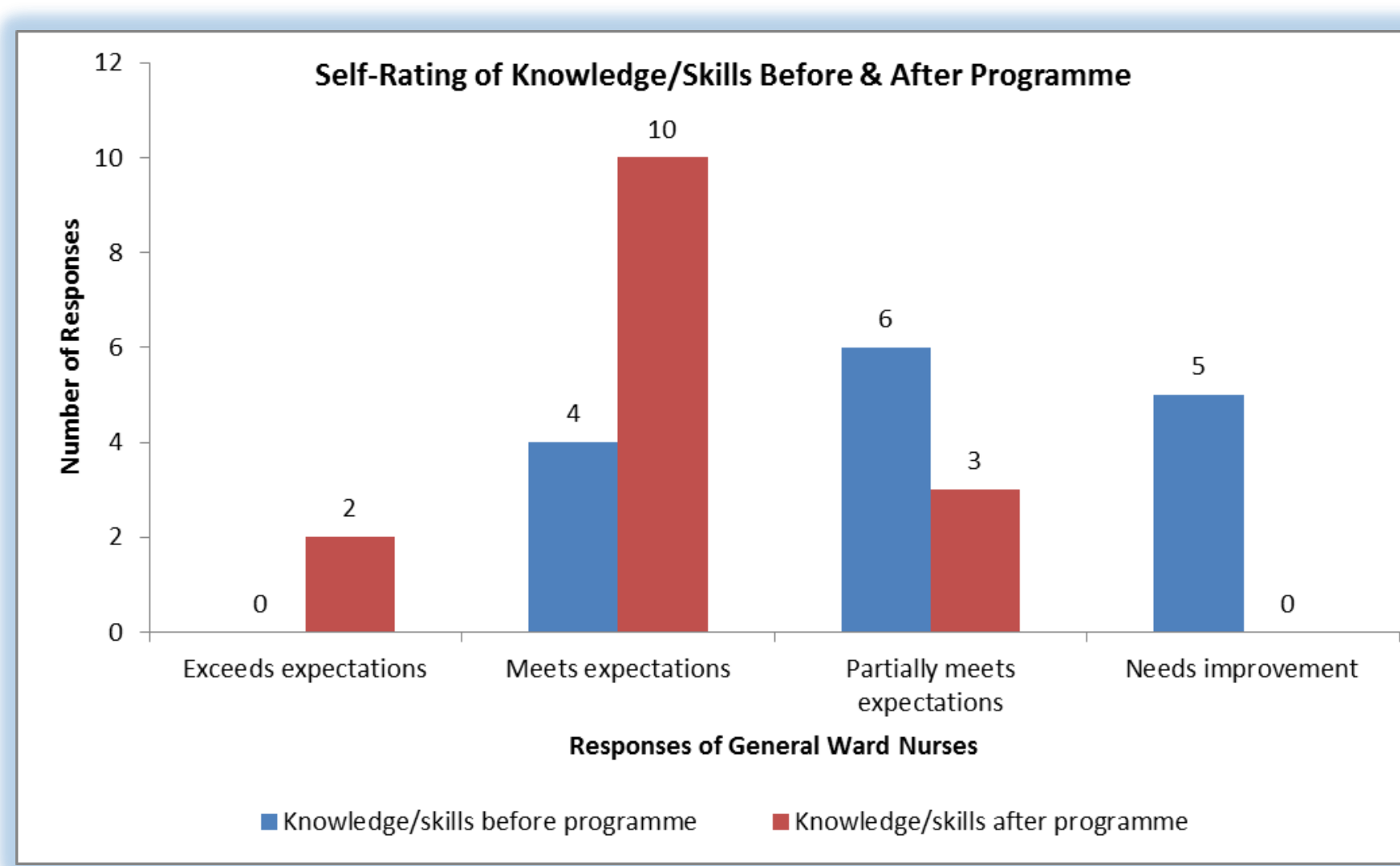

Fig. 7 Comparison of self-rating by GW nurses on knowledge/skills before and after SRT programme

Results of questionnaire showed that before the SRT programme, only 4 out of 15 GW nurses (27%) rated their knowledge/skills of resuscitation as meeting or exceeding expectations (Fig. 7). After the SRT programme, 12 out of 15 GW nurses (80%) rated their knowledge/skills as meeting or exceeding expectations (Fig. 7). The improvement in self-rating of knowledge/skills also indicated that the nurse are more confident of performing resuscitation after the programme.

Sustainability Plans

This training programme will be conducted for all wards every fortnightly or monthly so that nurses can retain their knowledge and skills in resuscitation. A minimum of 3 to maximum of 6 participants will be required for each session. The duration of each session will take approximately 2 hours. We plan to train identified trainers from each ward. Subsequently, this pool of identified trainers will conduct the fortnightly or monthly training programme for their wards. Regular meetings will be held with the trainers to evaluate the progress of GW nurses in performing resuscitation.

Conclusion

Results showed that the enhanced training programme involving hands-on simulation increased the knowledge and skills of the nurses in resuscitation. With this education programme in place, nurses who are inexperienced or have little experience will be able to perform better in resuscitation, leading to better outcomes for patients.