A PRACTICAL, MULTI-INTERACTION APPROACH TO IMPROVE PATIENT SAFETY AWARENESS AMONG HEALTHCARE PROFESSIONALS USING CREW RESOURCE MANAGEMENT

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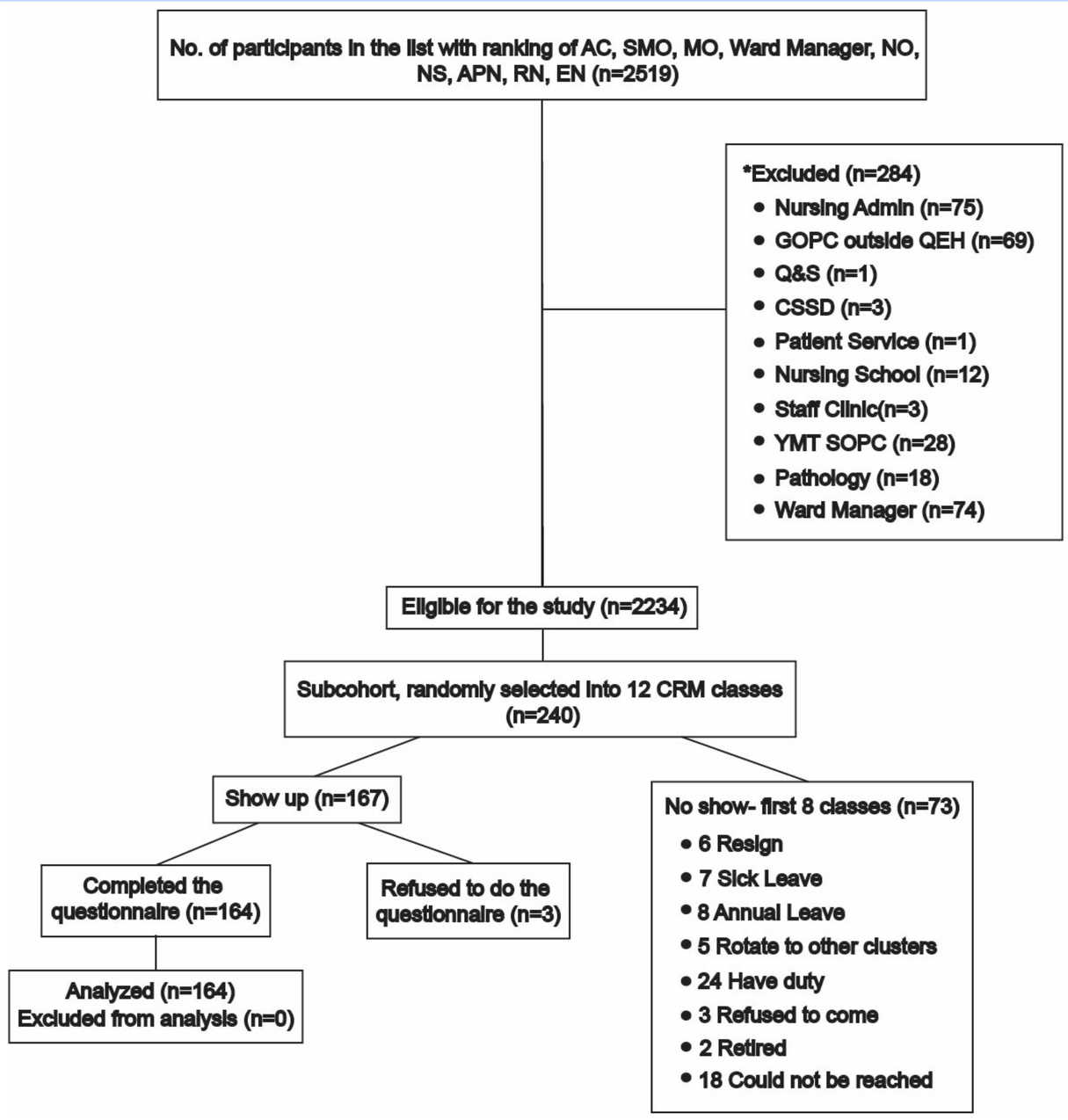
Objectives

To develop a classroom-based training program using crisis resource management (CRM) in a public hospital setting in Hong Kong SAR and to assess whether CRM classroom-based training using a multi-interaction approach could improve in attitude among frontline healthcare professionals.

Methods

We randomly selected 240 healthcare professionals involving teamwork and direct patients care to participate in a CRM classroom-based training program and 167 (69.6%) of them showed up. We collected data from 26 January to 27 March 2015 including pre-and-post intervention surveys and post-program evaluations. The intervention was a half day program led by 2 CRM certified instructors and emphasized leadership, communication, assertiveness and situational awareness. We selected these four CRM principles based on the staff learning needs among the high-risk departments in the hospital[1]. All sessions were specially designed according to the staff learning needs and each session began with a brief introduction, followed by various group interactions such as games, video clips, open discussion and exercises. The program cost approximately HK$47,500 (US$6,129) for 167 participants, CRM instructors, materials, and audio visual support.

Figure. Study design is shown. 167 health care professionals participated in the study and 164 participants have completed the survey.



Results

Of the 167 participants, 164 of them completed the survey [2]. The mean age was 38±9.4 years and 84.8% of them were nurses. After the training, the mean scores for all the survey items were found to increase to 82%. There was statistically significant positive attitude shifts ($p<0.05$) between the participant responses in the pre-intervention and post- intervention for items related to leadership, communication, assertiveness and communication. The biggest improvement was assertiveness which showed that their attitude towards speaking up for patient safety was greatly increased ($p<0.001$) at the end of the program. The post-program evaluation revealed that more than 85% of the participants found the program was useful, relevant to practice and interesting.

Table. Means and Standard Deviations (in Parentheses) shows significant positive attitude shifts ($p<0.05$) between the participant responses in the pre-intervention and post- intervention for items related to leadership, communication, assertiveness and communication in Human Factors Attitude Survey [2] (n=164) .

	Human Factors Attitude Survey Questions	Pre-training mean	Post-training mean	p-value
1.	Team leader and team members can improve decision-making skills through training.	3.96 (0.56)	4.23 (0.51)	<0.001
2.	Team leader should encourage team members' to raise questions during normal operations and emergencies.	3.94 (0.61)	4.30 (0.54)	<0.001
3.	My performance is not adversely affected by working with an inexperienced or less capable team member.	2.94 (0.84)	3.20 (0.88)	<0.001
4.	Team members should question the decisions or actions of the team leader during a procedure.	3.65 (0.63)	4.14 (0.52)	<0.001
5.	My ability to detect adverse situations has a direct relationship to the quality of decisions I make.	3.82 (0.59)	4.14 (0.47)	<0.001
6.	It is necessary for the team leader to explicitly tell team members that he/she wants their input.	3.85 (0.57)	4.14 (0.47)	<0.001
7.	In response to unplanned events, the team leader should verbalize plans and ensure that the information is understood and acknowledged by all team members.	4.08 (0.61)	4.29 (0.53)	<0.001
8.	A debriefing and critique of procedures and decisions after each event is an important part of developing and maintaining effective team coordination.	3.95 (0.58)	4.15 (0.56)	<0.001
9.	A discussion of alternative methods does not make the team leader appear indecisive.	3.55 (0.75)	3.90 (061)	<0.001
10.	The staff in my own department need training to "speak up" when they see something that is not right.	3.71 (0.75)	4.09 (0.74)	<0.001
11.	Supervisors should be able to provide specific instruction and feedback on teamwork skill attainment.	3.99 (0.39)	4.17 (0.45)	<0.001
12.	When making decisions, I gather as much information as time allows before making/executing my decision.	3.92 (0.56)	4.13 (0.51)	<0.001
13.	It is just as important to note and debrief what was done well as it is to note and debrief what needs improvement.	3.95 (0.53)	4.15 (0.51)	<0.001
14.	There are circumstances where another team member should assume control of the event.	3.58 (0.65)	3.82 (0.67)	<0.001
15.	If I perceive a problem with the event, I will speak up, regardless of who might be affected.	3.66 (0.67)	4.07 (0.61)	<0.001
16.	The team formation and decision-making skills of team leaders are as important as their technical skills.	3.91 (0.67)	4.18 (0.48)	<0.001
17.	During any procedure or shift, and in response to unplanned or unbriefed contingencies, the team leader should verbalize plans for procedures and should be sure that the information is understood and acknowledged by all team members.	4.04 (0.51)	4.20 (0.53)	<0.001

Conclusions

Results suggest that a multi-interaction approach, with trained instructors, can improve attitudes towards patient safety among frontline healthcare professionals. The provision of CRM education to frontline healthcare professionals can be an effective and low cost strategy for promoting CRM in a public hospital setting. Thus, we believe changes in attitudes conducive to patient safety and effective team performance.

References

[1] Chan CKW, So HKE, Ng WYG, et al. Participant evaluation of simulation training using crew resource management in a hospital setting in Hong Kong. Hong Kong Med J. 2016 Feb 12. doi: 10.12809/hkmj154595.
[2] Eric L Grogan, Renée A Stiles, Daniel J France , et al. The impact of aviation-based teamwork training on the attitudes of health-care professionals. J Am Coll Surg. 2004 Dec;199(6):843-8.

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