Introduction

Emotions can run strong in high risk/high stress situations and disrupt communications and affect quality and patient satisfaction. For example, too much anger or not empathy can short circuit the communication, leadership, and teamwork exchanges that are frequently cited as the root cause of medical errors and performance deficits. Our hypothesis was if we can practice the skills of emotional intelligence (reframed as non-technical skills) under fire in high risk/high stress simulations then attunement of these skills would be reflected in increased patient satisfaction scores.

Since most practitioners perform satisfactorily or better under normal or expected conditions we wanted to help residents and faculty prepare for situations that were not expected to happen but do happen. Also, to minimize the natural defensiveness in asking residents and faculty to identify and describe their emotional responses to unexpected events, we reframed emotional intelligence skills as non-technical skills and used both terms interchangeably.

Methods

In this first year study, there were three major methods: (1) repeated assessment of residents’ and faculty’s emotional intelligence, (2) participation in high risk/high stress simulations (3) and active involvement of senior faculty and department leadership.

In the first couple years of the training program, because of time and cost constraints and as most of us were relatively new to simulations, we borrowed and recreated simulations from professionally produced videos that showed breakdowns in performance under pressure. Examples of some of those professionally produced videos were: First, Do No Harm: A Case Study of System Failures and Johns Hopkins’ Study of Medical Errors: The Josie King Story. We showed part of the video, then had a brief simulation and debrief with our group. Next, we compared our group’s reactions to the comments in the professional video. Our goal was to encourage reflection of emotional reactions to high pressure moments. To facilitate discussions during the debriefing we encouraged residents to share their initial reactions to the unexpected event portrayed in the simulation as to what they would have liked to have said but did not. This airing of a range of blunt and sometimes amusing emotional reactions fostered an atmosphere where participants could feel more comfortable in acknowledging their own frustrations and the challenge of identifying more attuned reactions.

As our confidence grew with simulations, we created and produced our own high risk/high stress video simulations. One was titled: Responding to an Airway Emergency in the Operating Room: Technical and Non-Technical Skills. We recruited two anesthesiologists, two OR nurses and two members of our leadership team (DG and TT). Two of these members were our surgeon/actors and the other member of our leadership team (RW) was the producer/director. The surgeon/actors were encouraged to be gruff, the anesthesiologist snide, and the nurses uncooperative as the technical and non-technical problems increased. This snarling and frustrating atmosphere portrayed in the video created a number of opportunities where the video could be stopped, an encounter simulated and debriefed. Each year of the training, the faculty, residents, or a guest presenter created one or more high risk/high stress simulations that were debriefed and emotional reactions highlighted.

Results

On level 1, 97% of participants (103 of 106) agreed or strongly agreed they enjoyed the program. On level 2, 98% (104 of 106) strongly agreed or agreed they “used or could have used the information in their practice recently.” On the third outcome level, Table 1 demonstrated participants improvement in mean emotional intelligence scores from 102.19 (baseline/pertaining) to 107.29 (post training). This increase was sustained in successive years, and these results supported with linear growth curve analysis. At level 4, an increase in participants’ emotional intelligence scores and active involvement in high risk/high stress simulations corresponded with increase in patient satisfaction scores. Figure 1 shows the department’s percentile rank of patient satisfaction for 3 years before El training (89% in 2002, 90% in 2003 and 85% in 2004) and for 6 of the 7 years after El training (96% in 2005, 97% in 2006, 99% in 2007, 95% in 2008, data not available in 2009, 92 % in 2010, and 97% in 2011).

Discussion

High risk/high stress simulations were the sine qua non of our training program. The challenging nature of the simulations allowed participants during the debriefs to take risks beyond their usual comfort zone and to possibly say something stupid without feeling stupid. Faculty shared tacit knowledge of their reactions in a crisis and participants learned there were a range of valuable non-technical skills that are essential in a crisis. Our expectations and experiences suggested that most health care providers respond satisfactorily or better to normal everyday patient and team situations. In order to improve performance beyond the ordinary patient encounters providers must practice their reactions in high risk/high stress simulations.

In future training sessions, we plan to incorporate the principles of deliberate practice with feedback6. Each resident and faculty member will have specific reactions that they will be alerted to reflect on and practice visualizing. The repetitive practice of reflecting and visualizing helps generate a new emotional response habit6. For example, in high risk/high stress situations providers may learn to be alert to how quickly tunnel vision emerges and limits emotional awareness and team communication.

Conclusions

The use of high risk/high stress simulations combined with an emphasis on assessment of emotional intelligence or non-technical skills provided an opportunity to committed senior faculty and leadership positively affect patient satisfaction. “Increasing non-technical or EI skills may be part of a rising tide that contributes not only to patient satisfaction but also to improvement in interprofessional cooperation, in turn strengthening sign-outs, handoffs, patient centered care, and conflict reduction in high risk/high stress situations.”

Table 1:
Within-Person Changes in EQ Before and After Emotional Intelligence Training

<table>
<thead>
<tr>
<th>Tests of Random Effects</th>
<th>Variance</th>
<th>P-Value+++</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variance Among Participants in Average Emotional Intelligence Prior to Training</td>
<td>49.04</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Variance Among Participants in Change in Emotional Intelligence Pre-Training to First Year After</td>
<td>68.63</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Figure 1:
Department’s Patient Satisfaction Scores 2002-2011

References