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# Responding to the Unexpected: Tag Team Patient Safety Simulation

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**Abstract**
**Background:** Tag Team Patient Safety Simulation (TTPSS) was developed to prepare work-ready nursing graduates in the context of patient safety.
**Method:** This descriptive study examined nursing students' (n = 721) satisfaction with the TTPSS and validated the Satisfaction with Patient Safety Simulation Experience Scale (SPSSES).
**Results:** Students reported higher levels of overall satisfaction with TTPSS. Themes from open-ended responses, *Observing and being observed* and *Learning to respond to unexpected*, provided insight to the satisfying components of the learning experience.
**Conclusions:** The SPSSES is a valid survey instrument, verifying student's satisfaction with this large group simulation approach in preparing them to respond to patient safety issues.

Simulation in undergraduate nursing programmes has been used for decades and its value recognised. In recent times, new challenges have emerged as educators strive to deliver equitable and meaningful simulation learning experiences for large cohorts of students. Designed to meet this challenge, Tag Team Simulation (TTS) creates a simulation experience that actively engages large groups of learners at the same time (Levett-Jones et al., 2015). Tag Team Patient

Safety Simulation (TTPSS) extends the TTS concept to include a focus on patient safety and the preparation of undergraduate nurses for the workplace (Guinea et al., 2018). This paper reports on the learner satisfaction with TTPSS.

### Key Points
- Affirms the validity and reliability of a newly developed survey to evaluate learner satisfaction with patient safety with simulation.
- There is a need for educational approaches that enhance patient safety, are validated, and are reliable.
- Tag Team Patient Safety Simulation is an educational method that meets the learning needs of large cohorts of learners and is a positive learning experience.

## Patient Safety

Despite attempts over the past decade to address the human and systems factors that compromise patient safety, the frequency of preventable harm remains unacceptably high both in Australia and internationally (Bates & Singh, 2018; Makary & Daniel, 2016). It is argued that health care errors are the third leading cause of death in developed countries (Makary & Daniel, 2016). Unsafe care resulting in hospital-acquired infections, increased length of hospital stay, disability, and litigation is estimated to cost between 6 and 29 billion US dollars annually (World Health Organization, 2011). Patient safety is a priority for health care and in Australia that demands innovative approaches to improve the delivery of health care and minimise risk of harm.

A skilled workforce is a fundamental tenet of patient safety, and education of both students and qualified staff has become a key priority. Documents such as World Health Organization's Patient Safety Curriculum Guide (World Health Organization, 2011) and the National Safety and Quality Health Service Standards (NSQHSS) (Australian Commission on Safety and Quality in Health Care (ACSQHC), 2017) advocate for the need to embed patient safety principles into health care professional curricula. While there is both a growing call for graduates who can practise safely (Usher et al., 2017), and general agreement that education plays a crucial role in developing the knowledge, skills, and attitudes of needed for safe practice (Bogossian et al., 2018; Seaton et al., 2018). Currently, there are a limited number of educational approaches that are both innovative and cost-effective and prepare learners for practice at the same time (Attree, Cooke, & Wakefield, 2008).

One of the key challenges to imbedding patient safety as an integral curriculum imperative for nursing education is the lack of clarity about the specific patient safety skills and knowledge required of nursing graduates. Although the WHO Patient Safety Curriculum Guide (World Health Organization, 2011) provides a degree of guidance, it focuses primarily on medical students. Furthermore, the purpose of the NSQHSS is not educational rather it was designed to support clinical governance and risk mitigation in health care organisations. To address this need, Levett-Jones et al. (2017) used a modified Delphi technique to develop a Patient Safety Competency Framework (Levett-Jones, Dwyer, Reid-Searl, Guinea, et al., 2017) and Web site (Levett-Jones, 2017) providing a blueprint detailing optimal student performance in relation to patient safety. This framework was used to guide the development of the TTPSS (Guinea et al., 2018) evaluated in this study.

### Patient Safety Simulation

With the aim of preparing graduates to meet workplace expectations, simulation-based education has become an almost ubiquitous approach for enhancing the technical and nontechnical skills needed for safe and effective practice (Alanazi, Nicholson, & Thomas, 2017). However, in many undergraduate nursing programs, large numbers of students make the provision of high-quality simulations challenging. There is a need for simulation activities that engage large groups of learners, focus on patient safety, and are cost-effective (Bogossian et al., 2018; Kelly, Hopwood, Rooney, & Boud, 2016; Usher et al., 2018).

Tag Team Simulation (TTS), first developed in 2015 (Levett-Jones et al., 2015), was designed to address these issues and has been successfully adapted for use in other contexts (Mainey, Dwyer, Reid-Searl, & Bassett, 2018). TTS is underpinned by the tenets of Forum Theatre (Boal, 2002) and presents the simulation as a theatrical "play" with five parts: *Prologue, Act 1*, *Intermission*, *Act 2*, and *Debrief* (Guinea et al., 2018).

The TTPSS extends the TTS approach by focussing on patient safety simulations that align with the NSQHS Standards (Guinea et al., 2018) and the Patient Safety Competency Framework (Levett-Jones, Dwyer, Reid-Searl, Guinea, et al., 2017). In TTPSS, as with TTS, learners are divided into groups of cast members who are directly involved in the simulation activity and audience members who are active observers. The cast members (learners) exchange roles "tagging" in and out of the simulation scenario, while the observers are charged with the responsibility of providing constructive feedback during the "intermission" (midway through the simulation) and in the debrief. In TTS and TTPSS, the educator takes on the role of a "director" facilitating the simulation as it unfolds. A simulated patient or "protagonist" (around which all activity is focused) is played by an actor. TTPSS extends the initial TTS concept to include a series of cards called the antagonist, "Cue" and "What if … " cards developed from real clinical encounters that potentially

compromise patient safety are used by the director to present clinical challenges that require learners to think critically and behave in a manner that promotes patient safety (Guinea et al., 2018). The "Antagonist Cards" are given to the learner/s during the scenario to purposely change the direction of the scenario from a typical or safe scenario to one that presents a professional or social challenge for the learner (Guinea et al., 2018). "Cue cards" guide the observers to focus on critical aspects of practice and provide critical feedback about specific practice issues. "What if" cards are used by the director to focus debriefing and extend critical thinking. The TTS approach enhances engagement by ensuring that all learners remain actively involved in the unfolding "drama" (Levett-Jones et al., 2015). A benefit of the TTPSS concept is that the simulation can be "played" out in any environment and does not require highly technical simulation modalities or settings. The goal of TTPSS is to prepare work-ready graduates with the skills and knowledge to practise safely by exposing them to real-life patient safety scenarios in simulation learning environments. What distinguishes the TTPSS approach both from TTS and other simulation methods is the attention to equipping students with the assertiveness skills and resilience to actively speak up to advocate for patient safety.

## Satisfaction With TTPSS

Measures of quality learning include self-reported student satisfaction scales (Courtney-Pratt et al., 2015; Levett-Jones et al., 2011), knowledge, and skills acquisition. The quality of clinical simulation and the learning of technical and nontechnical clinical skills of nursing during the UG program will impact the translation of this knowledge to delivery of quality of care and ultimately patient safety behaviours once in the clinical environment (Reime et al., 2017). Learner satisfaction is an important measure of engagement in simulation (Prion, 2008), and there is correlation between student satisfaction, self-confidence (Levett-Jones et al., 2011), and translation to practice (Lee & Oh, 2015). TTPSS can be challenging for students as there is "no room to hide" as all students are required to actively participate and to collaboratively address critical health care issues that have the potential to negatively impact patient safety. For these reasons, and the growing body of literature addressing performance anxiety in simulation (Cantrell, Meyer, & Mosack, 2017), we considered it essential to evaluate the degree to which students were satisfied with and recognised the value of this novel but challenging simulation approach.

## Methods

### Design

This descriptive study evaluated nursing student's satisfaction of participating in the TTPSS. The study used survey method with a mix of both quantitative (Likert scale) and qualitative (open-ended) responses. The primary aim of this study was to examine nursing students' level of satisfaction with the TTPSS. The secondary aim was to evaluate the factor structure and psychometric properties of the newly developed Satisfaction with Patient Safety Simulation Experience Scale (SPSSES).

### Participant Recruitment

A convenience sample of undergraduate nursing student (n = 721) from across four Australian universities volunteered to participate in a TTPSS activity and compete the survey. Ethics approval was received from the university Human Research Ethics Committees (HREC) of each participating university (HREC numbers: H16/07-198, A/16/873, ETH17-1292, 2016-196R). Potential participants were notified of the study via an online advertisement and they were provided with a plain English information letter outlining the purpose, voluntary nature of the study, and the process of data collection. Only students who provided written informed consent were included in the study. Participant confidentiality was maintained by numerically coding each survey and ensuring that no identifying personal information was recorded. To address ethical issues related to student/academic power imbalance, participation was voluntary and data were collected by a research assistant. Furthermore, the activity was extracurricular. Surveys were distributed after participation in the simulation. Instructions were given to participants that surveys should be completed without providing any identifying details. The study was conducted in accordance with national ethics standards (National Health & Medical Research Council, 2007). Data were collected between 2016 and 2017 using an adapted version of the Satisfaction with Simulation Experience Scale (SSES). Permission to use and adapt the tool was received from the developer of the SSES tool (Levett-Jones et al., 2011).

### Survey

Previous studies attest to the strong psychometric properties of the Satisfaction with Simulation Experience Scale (SSES) with a reported high level of internal reliability with Cronbach's coefficients ranging from 0.7 to 0.95 (Courtney-Pratt et al., 2015; Levett-Jones et al., 2011; Williams & Dousek, 2012). The SSES was adapted, specifically to measure student satisfaction with the TTPSS and it was labelled SPSSES. The revised scale was reviewed and pilot-tested with an expert panel of clinical educators, external to the study authors, and academics with experience in simulation design and instrument development. Only minor grammatical changes were made to add clarity. The final SPSSES focused on four priori factors of Briefing (4 items); Patient safety (7 items), Clinical Practice (6

items), and Debriefing (11 items). In addition, an open-ended question at the end of the scale invited participant feedback. The SPSSES items were rated using a 5-point Likert scale—strongly disagree [1] to strongly agree [5]. Higher scores indicate a greater level of satisfaction with the simulation experience. No items are reverse scored.

## Data Analysis

Quantitative data were transferred to Statistical Package for the Social Science Statistical Software package version 24.0 for Windows. Item responses were described using means and standard deviation. Confirmatory factor analysis was conducted to assess the model fit of the priori four-factor structure of the adapted SPSSES. A weighted least squares means and variance estimation technique was applied using a polychoric correlation matrix, suitable ordinal data (Muthen & Muthén, 2010). Item cross-loadings and correlations among residuals were not permitted, meaning the model was highly restrictive. Root mean squared error of approximation (RMSEA), Comparative Fit Index (CFI), and Tucker-Lewis Fit Index (TLI) statistics were used to assess model fit as chi-square tests tend to be oversensitive to large sample sizes; RMSEA values of $<0.07$ and CFI/TLI values $\geq 0.90$ indicate good fit (Hooper, Coughlan, & Mullen, 2008) and Pearson's correlation coefficients are calculated to investigate the relationships between the SPSSES factors. While the significant chi-square ($p < .0001$) means the data are significantly different to what the model predicts, indicating a poor model fit, this statistic is sensitive to large sample sizes (Santor et al., 2011). Therefore, conclusions around model fit were based on RMSEA, CFI/TLI values that consider the sample size and complexity of the mode (Santor et al., 2011). Cronbach alpha coefficient was calculated to measure internal consistency, and coefficients over 0.75 were considered satisfactory (Tabachnick & Fidell, 2013). A $p$ value of $<.05$ was used as the cutoff for statistical significance.

An interpretive inductive approach was used for analysing the qualitative data from the open-ended responses. Members of the research team independently read the textual data line by line (Braun & Clarke, 2006), and to minimise abstract interpretation, researchers met to reach consensus on related themes (Elo et al., 2014; Sandelowski, 2010).

## Results

## Quantitative Results

All 721 nursing students who participated in the TTPS simulation completed the anonymous SPSSES survey. Item response-option frequency distributions were skewed to the right with most participants either ''agreeing'' or ''strongly

agreeing'' with each of the items (see Table 1). Overall, the participants were highly satisfied with the simulation experience, with mean satisfaction scores of 4.2 (SD = 0.53; range 1–5). Highest levels of satisfaction (agreeing and strongly agreeing) were the value of the learning experience (94%), the summary of important points during intermission and debrief (95.3%), and the encouragement to participate in the debrief (n = 96%). Items that were less well received were the level of realism (76.8%) and the extent the simulation tested their clinical ability (81.3%) and developed their confidence (78.3%).

## Factor Analysis

Confirmation factor analysis revealed a reasonable model fit ($\chi^2_{318} = 1{,}454.03$, $p < .0001$, RMSEA = 0.072 (90% CI = 0.068–0.076), CFI = 0.968, TLI = 0.965) for the priori four-factor structure of Briefing, Patient Safety, Clinical Practice, and Debrief. Cronbach's coefficients of the subscales all report good reliability ($\alpha$ = 0.8, 0.91, 0.89, 0.93, respectively). The RMSEA of 0.072, $<0.80$ indicated a good to excellent fit. Fit statistics, CFI (0.968) and TLI (0.965), that account for complexity of the model are extremely good (Kenny, 2015). The model shows that items load consistently above 0.75 and positively on their respective factors indicating stability of factor structure in the current sample (Table 1). Pearson correlations demonstrated statistically significant positive correlations between all factors ranging from 0.77 to 0.88 (Table 2). While participants were more likely to agree or strongly agree that the Briefing and Debriefing components of the simulation contributed to their learning, item loadings were highest for the Patient Safety factor (most > 0.85).

## Qualitative Results

Of the 721 surveys returned, 156 (21.6 %) participants provided written responses to the open-ended question. As with the quantitative responses, overwhelming responses indicated that TTPSS was a positive learning experience. They enjoyed the experience, gained new insights into patient safety, and valued the relevance of this mode of simulation to clinical practice. The following participant quotes are typical of those provided:

- It was a very good idea to facilitate learning
- Really enjoy the activity, please keep up the good work
- Beautiful experience which brought a wonderful opportunity to discuss and ask questions on patient safety
- I thought it was a really good learning experience with practical applications that will definitely help in a clinical setting.

The main themes that informed the overall satisfaction with the simulation experience were *Observing* and *being*

**Table 1**   Factor Loading and Mean Responses to Survey Item

| Item All Study Sites n = 721 | Mean | SD | Alpha | Loading Factor 1 | Loading Factor 2 | Loading Factor 3 | Loading Factor 4 |
|---|---|---|---|---|---|---|---|
| **Briefing n = 676 excluded 45** | 4.47 | 0.45 | 0.8 | | | | |
| The learning outcomes for TTPSS were clear | 5 | 0.00 | | | | | |
| Readings and presimulation activities were provided | 4.31 | 0.43 | | 0.793 | | | |
| The facilitator explained how TTPS was organised and managed | 4.32 | 0.43 | | 0.882 | | | |
| I understood my role | 4.27 | 0.75 | | 0.832 | | | |
| **Patient safety n = 669 excluded 52** | 4.24 | 0.61 | 0.91 | | | | |
| The simulation developed my knowledge and skills specific to patient safety | 4.32 | 0.68 | | | 0.891 | | |
| The simulation developed my clinical decision-making ability in relation to patient safety | 4.24 | 0.71 | | | 0.886 | | |
| The simulation enabled me to demonstrate my knowledge and clinical skills specific to patient safety | 4.15 | 0.80 | | | 0.888 | | |
| The simulation helped me to recognise critical aspects of patient safety care | 4.30 | 0.68 | | | 0.861 | | |
| The simulation provided an opportunity for me to engage in critical thinking | 4.34 | 0.66 | | | 0.851 | | |
| This was a valuable learning experience | 4.40 | 0.70 | | | 0.898 | | |
| The simulation felt real | 3.93 | 0.98 | | | 0.743 | | |
| **Clinical practice n = 643 excluded 78** | 4.05 | 0.67 | 0.89 | | | | |
| The simulation tested my clinical ability | 3.96 | 0.86 | | | | 0.789 | |
| The simulation helped me to apply what I have learnt previously | 4.13 | 0.77 | | | | 0.85 | |
| The simulation helped me to recognise my strengths and weaknesses | 4.10 | 0.83 | | | | 0.799 | |
| The simulation has developed my confidence | 3.94 | 0.87 | | | | 0.861 | |
| As a result of the simulation, I feel more prepared for clinical practice | 4.05 | 0.81 | | | | 0.887 | |
| The Cue Cards were useful to facilitate learning | 4.11 | 0.79 | | | | 0.791 | |
| **Debrief n = 641 excluded 80** | 4.26 | 0.54 | 0.93 | | | | |
| Constructive criticism was provided during intermission and debriefing | 4.35 | 0.64 | | | | | 0.763 |
| The facilitator summarised important issues during Intermission and Debrief | 4.38 | 0.64 | | | | | 0.838 |
| I had the opportunity to reflect on and discuss my role during the debriefing | 4.17 | 0.764 | | | | | 0.838 |
| We were provided with opportunities to ask questions | 4.33 | 0.676 | | | | | 0.725 |
| I received feedback that helped me to develop my understanding of patient safety | 4.18 | 0.756 | | | | | 0.863 |
| Reflecting on and discussing the simulation enhanced understanding of patient safety | 4.27 | 0.655 | | | | | 0.922 |
| The facilitator's questions helped me to learn | 4.27 | 0.687 | | | | | 0.883 |
| The Antagonist Cards were an effective learning strategy | 4.12 | 0.806 | | | | | 0.779 |
| The facilitator made me feel comfortable and at ease during the debriefing | 4.26 | 0.714 | | | | | 0.848 |
| I was encouraged to participate in the debrief | 4.37 | 0.631 | | | | | 0.825 |
| The "What if" questions were an effective learning strategy | 4.06 | 0.802 | | | | | 0.789 |

Range 1 to 5: 1 = strongly disagree, 2 = disagree, 3 = unsure, 4 = agree, 5 = strongly agree.
*Note.* TTPSS = Tag Team Patient Safety Simulation.

**Table 2** Interfactor Correlations

| Priori Factors | Briefing | Patient Safety | Clinical Practice | Debrief |
|---|---|---|---|---|
| Briefing | 1 | | | |
| Patient safety | 0.841 | 1 | | |
| Clinical practice | 0.772 | 0.88 | 1 | |
| Debriefing | 0.831 | 0.869 | 0.881 | 1 |

*observed* and *Learning to respond to unexpected*, and within these themes, there were elements of the learning experience that both enhanced and distracted from the overall satisfaction with the experience. These themes, enhancers, and distractors along with examples of participant voice are presented in (Table 3).

## Observing and Being Observed

Being an observer and observing the changing roles and how other students responded when patient safety was compromised facilitated different perspectives on how to optimally respond. The students felt adequately briefed on what to observe (Cue cards) and were invited to offer feedback on their observations during the debrief. However, within the observer group, there was a cohort that articulated the desire to be more actively involved as active participants in the simulation experience (Table 3). For the students who were involved in the unfolding simulation experience, the fear of being observed and related performance anxiety was noted by some participants to have the potential to impede both performance and learning. The participants felt that "tagging" provided a safety net that permitted them to move freely in and out of the simulation experience in response to their level of confidence. "Tagging out" allowed the learner to reflect on their performance, observe others, and then "tag in" to have another attempt at the learning activity. Thus, "tagging in" and "tagging out" minimised performance anxiety that can occur in simulation.

Conversely, some participants felt that the repetitive changing of roles during the simulation was distracting, creating confusion, and making the scenario disjointed.

## Learning to Respond to Unexpected

Unique to TTPSS is the inclusion of Antagonist Cards which introduced an element of expecting the unexpected. For the participants, not knowing what to do because this mode of simulation was a new experience, and not knowing what to expect (due to the use of Antagonist Cards), contributed to their anxiety (Table 3). Consistent with the real world of nursing, the Antagonist Cards presented the participants

with unexpected and sometimes confronting situations such as a confused patient shouting at the nurse or a junior nurse being exposed to an unsupportive senior nurse. Similarly, when participants were directed, through the Antagonist Card, to perform in a manner that compromised patient safety or contradicted how they would "typically" behave, some experienced cognitive dissonance and distress. Again the benefit of the "Tagging in" and "Tagging out" allowed participants to opt out of the scenario as they deemed necessary. However, after the intermission and the discussions about how to respond to these types of challenging situations, many participants felt empowered and equipped to embrace the opportunities to respond more effectively in Act 2. The opportunity to repeat the scenario in Act 2 also increased participants' familiarity with simulation process and they valued the opportunity to apply their new learnt skills. Ultimately, many participants commented on how, having encountered these challenging situations in the simulation, they felt they had a repertoire of responses from which to draw on should they be confronted with simulation experiences in clinical practice.

## Discussion

Preventing patient harm remains a significant health issue and one that requires multiple strategies to address. Universities have a distinct role to play in improving patient safety by shaping undergraduate student's patient safety attitudes and skills early on in their formative years of learning. Safety skills will ultimately inform how they engage with consumers and deliver quality care for years to come (Department of Health, 2002). TTPSS has proven to be a valuable and valued approach for exposing nursing students to situations that have the potential to compromise patient safety. The quantitative and qualitative results of this study indicated that participants were highly satisfied with the TTPSS learning experience that simultaneously nurtured active engagement of both observers and cast members. Furthermore, this authentic and collaborative simulation modality created a learning environment that challenged learners to respond to confronting everyday clinical situations with a degree of confidence and determination.

One of the factors that may have enhanced participant satisfaction appeared to be the clarity of the expectations inherent in the observer role. Clarity was achieved with the use of "Cue cards" and adequate prebriefing, which directed them to focus on specific patient safety issues and provide critical feedback during the intermission and debrief. This finding is supported by previous research that found that student engagement is significantly improved when learners who take on an observational role receive specific guidance about what to focus on through the use of observations tools (Kelly et al., 2016; Norman, 2018; O'Regan, Molloy, Watterson, & Nestel, 2016; Reime et al., 2017). Bland and Tobbell (2016) also noted the importance of social collaboration through working

**Table 3**    Emergent Theme From the Qualitative Responses

| Themes | Enhancers | Voice | Distractors | Voice |
|---|---|---|---|---|
| Observing and being observing | Observer: knowing what to look for and seeing different perspectives | Interesting. It helped me understand the role of nurse.<br>It was a good experience. You need insight about it [adverse experiences]. Helped how I can deal [with[ similar situations in the future<br>The simulation built my confidence in communicating with and understanding my role as a nurse if I encounter a similar experience. I loved it that everyone got a chance to talk. Thanks | Observer: being an observer meant limited opportunity to participate | Maybe it would be better if all the students had a chance to participate in the Tag Team<br>As one of the observers, I had no chance to participate or practise my skills anyway. Watching others did not really help my own learning |
| | Being observed: opting in and opting out | I think it was a good idea to have the tag team because it allows others to speak and seek help | Being observed: not enjoying being observed | Not everyone likes to be in a spotlight and TTPSS is something that puts someone to their greatest fear of being on stage |
| Learning to respond to unexpected | Antagonist enhancers: learning/observing from others how to react in situations | I like antagonist part and seeing how people react in the situation<br>Good learning experience and an opportunity to see what can happen in real-life experiences | Antagonist challenges: confronting | Did not appreciate [the patient] yelling. Felt uncomfortable & didn't want to participate<br>I felt as though the actors were quite aggressive in their response which made us all quite nervous |
| | Repeating: repeating or observing the simulation | The second simulation was much better than the first. I was more familiar with the patient situation and felt I learnt more from the simulation as it is a situation I have come across before | Not knowing: new simulation modality and changing roles | Tag team go a little confusing made the experience a little choppy an unnatural<br>I think having more of an understanding of what was required would have been more beneficial |

together, learning from each other, giving and receiving feedback (Bland & Tobbell, 2016).

As with previous simulation research, the participants in our study found that being observed by peers and working in large groups sometimes caused feelings of intimidation and anxiety (Bland & Tobbell, 2016). However, TTPSS, while exposing students to anxiety provoking learning experiences, also provided them with a "safety net" whereby they could choose to "tag out" if they felt uncomfortable. This ability to opt in and/or opt out of the simulation empowered learners to take control of their learning and tended to dissipate some of their anxiety and trepidation.

The stop, reflect, and replay inherent in TTPSS presented learners with the opportunity to improve their performance in Act 2 and to demonstrate their new learning, an approach which was valued by the participants. This returning to and reflecting on the experience, in essence, promoted constructive alignment as learners could draw on their new and emerging perspectives, either as an active participant or observer, and to enable them to construct meaning from the learning (Sivertsen, McNeill, & Müller, 2016).

The cognitive dissonance students feel when confronted by unsafe or unethical practice clinical practice situations is reported in the literature (Hicks, Robertson, Robinson, &

Woodrow, 2001). Students often report difficulty in knowing how to address these situations and advocate for patients without compromising either their acceptance by the nursing team or their clinical assessment appraisal (Bickhoff, Levett-Jones, & Sinclair, 2016). We propose that presenting learners with confronting scenarios that have the potential to compromise patient safety within the safety of a simulation environment can build resilience by providing opportunities for them to cognitively rehearse how they will respond to these types of situations in practice (Griffin & Clark, 2014).

Our study reinforces the importance of being cognisant of ensuring the "psychological safety" (Kolbe, Grande, & Spahn, 2015) of the learner and the need for adequate pre-briefing about the level of immersion required (World Health Organization, 2011). This is referred to as creating a "fiction contract" (Muckler, 2017). Muckler et al. propose that the learner is cognitively engaging in an unspoken agreement that the simulation is real, knowing it is in fact a substitute for real encounter. This fictional contract should be introduced before the commencement of the simulation activity (Muckler, 2017). With TTPSS, this point is particularly important in regards to the use of the Antagonist Cards that required them to behave in a manner that is uncharacteristic of their "usual behaviour." Being cognisant of psychological safety requirements, educators need to reassure learners that these intentional mistakes have been introduced to enhance their learning by helping them to gain a greater understanding of how to respond to unsafe practice. Educators also need to establish ground rules such as confidentiality, communication, and mutual respect before and throughout the simulation (Muckler, 2017). The challenge is to find the balance between simulating unfavourable clinical situations that challenge patient safety and providing positive resolutions that empower learners to overcome their fears, reengage, and apply their new skills. Participants in our study, having experienced or observed incidents that compromise patient safety (albeit simulated events) were willing to reengage in the simulation. This subsequent willingness to reengage in the simulation reflects an increase in resilience and preparedness to engage in similar real-life experiences. Turner (2014) defines resilience as one's ability to return to a state of normality after an adverse event and to look positively towards the future (Turner, 2014). Given the links between resilience and retention in nursing, the potential contribution of TTPSS to resilience building is encouraging.

There is an element of TTPSS which creates a psychologically safe environment where challenging clinical situations are simulated, accepted, and thus become a part of the learning. There is some evidence that learning from how others respond to clinical errors results in a greater likelihood that subsequent clinical errors will be prevented or reported (Edmondson, 2004). Learning from errors is essential (Frese & Keith, 2015). An important outcome of TTPSS was the development of a mindset that experiencing and observing others responding to errors within the safety of a simulated learning scenario provided participants with the skills to speak up in preparation for future encounters.

## Conclusion

TTPSS, a novel patient safety simulation approach, was developed with the specific intent of preparing work-ready nursing graduates. This study has identified that participants recognised and valued this intent. This paper has also demonstrated that, overall, participants were highly satisfied with how TTPSS exposed them to real-life patient safety events within the safety of a simulated learning environment. Given the positive correlation between student satisfaction, confidence, and subsequent transfer to practice, these positive results are encouraging. However, further studies are required to examine whether the learning from TTPSS does in fact transfer to practice and whether the promise of increased resilience and willingness to advocate for patient safety is realised within the complexity and challenges inherent in contemporary practice settings.

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