



Journal Club Summary April 2018 : “Unconditional Love”



**Expert Opinion:
Dr Sarah Janssens**

***“We need to continue to love our simulation
and look for the warts!”***

The Article :

"Evaluation of learning from Practical Obstetric Multi-Professional Training and its impact on patient outcomes in Australia using Kirkpatrick's framework: a mixed methods study"

Kumar A, Sturrock S, Wallace EM, et al (2018)

[BMJ Open 2018;8:e017451. doi:10.1136/bmjopen-2017-017451](https://doi.org/10.1136/bmjopen-2017-017451)

Case & Summary Author :

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Expert Commenter :

- Dr Sarah Janssens

Editors :

- Dr Victoria Brazil
- Jesse Spurr

First Published :

Simulcast Journal Club is a monthly/ series that aims to encourage simulation educators to explore and learn from publications on Healthcare Simulation Education.

Each month we publish a case and link a paper with associated questions for discussion.

We moderate and summarise the discussion at the end of the month, including exploring the opinions of experts from the field.

The Case :

Nimali looked wearily at the end of financial year forms that had piled up on her desk. Trawling through the accounting reports her stomach sank as she noticed how close to the bottom line their centre was treading. They were keeping their heads above water and the CEO of the hospital was a fan of simulation, but still... they were an expensive unit and some of the medical wards had been complaining of cut backs.

She turned to Nitin who was quietly typing on the other side of the office. "Do you ever worry all this isn't worth it?", she asked.

Nitin paused for a moment and smiled. "I haven't been here as long as you of course, but even I can see the difference in culture that your facility has brought to the hospital. People communicate better. The departments interact more warmly. It's a hospital people can be proud of. Don't doubt yourself Nimali."

Nimali was touched, but she was rarely one to avoid reflection.

"But is that us?" she asked, "Or are we just riding on the coat-tails of other cultural changes? Have we really made a difference to patient outcomes? It's so damn hard to prove with research, this weirdly nebulous stuff! We argue that simulation changes so many things, but we have so little evidence to prove it. I don't know. Sometimes I worry we're deluding ourselves."

Nitin looked at her with a compassionate grin. "How does one so talented have so much self doubt? You make a difference my friend. Don't worry. One day you'll prove it."

His words were genuine, too. Having learned so much from her on his fellowship, Nitin was convinced Nimali could do anything. Then again, he thought quietly, he was biased. The truth was he'd been in love with her from the first time he'd heard her talk about psychological safety.

Discussion :

Simulation Educators often have a dual burden to both educate and promote their service as a powerful way to improve patient safety, but we have often struggled to prove it works. Have we in some ways developed an unconditional love for the medium without evidence of actual patient impact? In this month's paper, we hope to learn from Kumar et al's approach, where they used a mixed methods study to assess whether a simulation program made an actual measurable impact on patient outcomes.

Article Summary :

It's often hard to prove what we do makes a difference, and in many ways finding hard proof that simulation education changes patient outcomes is the Great White Whale of simulation education research.

In this open access paper from Kumar et al, the authors attempt to catch that whale by using a mixed methods analysis to evaluate whether the implementation of an internationally recognised [Obstetric Simulation Program](#) is associated with an improvement in patient care for 3 suburban Victorian hospitals. By combining a quantitative, number crunching approach with a more complex qualitative analysis, the authors are able to explore the 'hard data' of patient outcomes *and* the thematic educational outcomes of the program.

As such this two prong approach involves :

- 1) Exploring pre-existing data for emergencies involving eclampsia, shoulder dystocia, neonatal resuscitation and PPH from 2 years before and after the implementation of the PROMPT program. Data explored included things like cord lactate, volume of blood loss, neonatal injuries and use of certain interventions.
- 2) Analysing data from pre and post course questionnaires (involving Likert scales and free text responses) to explore any changes in staff attitudes and to explore any particular trends in thematic analysis.

In the end, the paper was able to show mostly statistically insignificant trends towards better patient outcomes for a lot of specific complications (less fractures, better APGAR scores, less brachial plexus injuries) with occasionally statistically significant change (such as an increase in patients with large volume PPH going to OT post delivery, and increased use of Bakri balloons). The thematic analysis of learner feedback revealed a lot of themes regarding reflection on Crisis Resource Management in particular.

In the end, the hospitals involved have formalised the PROMPT program into their training programs with mandatory biannual attendance for birth suite staff, so it appears to have generated strong buy in within the organisation of these hospitals.

As for those of us in simulation education there's some promising hints in this paper of hard evidence of our endeavours, but at the moment (for this paper at least) we appear to still be Captain Ahab, continuing to search the sea for evidence of the whale we prize so dear.

Expert Opinion: Dr Sarah Janssens, Obstetrician and Gynaecologist



Dr Sarah Janssens studied medicine at the University of Queensland and began working at Mater after completing specialty training in 2012. Since then she has developed her skills as a simulation educator through courses including NHET-sim and the Center for Medical Simulation’s Simulation as a Teaching Tool and Advanced Debriefing courses.

Sarah has developed and delivered a variety of interdisciplinary immersive obstetric simulation activities.

Sarah also has a keen interest in using simulations to teach procedural and surgical skills. Her achievements in this area so far include: Implementing a laparoscopic simulation training curriculum for gynaecology trainees, Introducing a transvaginal USS simulation training curriculum, creating the NOVICE course (O&G Pre-Vocational Interactive Clinical Education) to teach junior doctors basic obstetrics and gynaecology skills.

Qualifications: Bachelor of Medicine/Bachelor of Surgery, Fellow of the Royal Australian and New Zealand College of Obstetrics and Gynaecologists.

Thanks Ben for the opportunity to comment on this paper. It will be hard to out-do your clinical vignette, and the comments of your new and veteran contributors! I love the way you have used Nitin and Nimali to bring into sharp focus our tendency to be so in love with simulation that we don’t see the warts. We need to continue to love our simulation and look for the warts – not so we can abandon our love, but apply liberal amounts of imiquimod – a painful procedure (or so I hear....)

The PROMPT program (www.promptmaternity.org) is an unconditionally loved program. It is a multiprofessional simulation program developed in the UK and adopted by RANZCOG. We love it because in the UK it led to considerable improvements in clinical outcomes, including serious neonatal morbidity such as HIE and brachial plexus injury.¹ The work of the PROMPT group has been at the forefront of demonstrating T3 outcomes for SBE in obstetrics, making the argument for implementing sim in my hospital an easy one to win.

The ability to scale up and replicate the impact in other settings is a challenge for any program. PROMPT has taken on this challenge, going on to adapt and implement PROMPT globally with some regions publishing the related clinical improvements.^{2,3} Following implementation of PROMPT in Victorian hospitals, reported clinical improvements were marginal, however only 50% of clinicians received training, limiting the potential impact of the program. Given this, I was very pleased to see this paper, which evaluated the effects of the PROMPT program in a smaller cohort of three Melbourne hospitals.

Kumar et al set themselves the admirably ambitious target of evaluating the PROMPT program over four of Kirkpatrick’s levels of training effectiveness, using some variations proposed by Barr et al. Utilising routinely collected data and a mixed methods approach they report on participant reactions (Level 1), participants change in knowledge (Level 2b), organisational change (Level 4a) and clinical outcomes (Level 4b).

For me the highlight of the paper was the rigorous qualitative analysis of the free text “take home” learnings which provided a really deep dive into what the participants are getting out of the program. (I always wonder if those comments go into a drawer somewhere until they are shredded – in this case, no!) Reassuringly for the PROMPT faculty, the themes uncovered align well with many of the principles taught in the program. Perhaps I’m being a bit picky here, but I do feel the claim of knowledge acquisition from self reported comments was a bit over – reaching and like Luke Summers agree that it may have been better reported as a change in attitudes rather than acquisition of knowledge.

The way that the authors describe using Lewin’s unfreezing model of change to embed the program in the hospital culture also deserves to be highlighted. Thanks to Vic Brazil for pointing us in the direction of different evaluation models for educational programs (AMEE guide 67: “Educational programs are fundamentally about change”). Too often we implement a program with little thought to change management principles, and thus can put the adoption

and sustainability of the program at risk, no matter how good it is. Additionally, at the 4a level, I feel the paper would have benefited from the inclusion of organisational changes occurring as a result of the program beyond the program becoming mandatory (eg environmental changes/documentation upgrades).

Regarding the clinical outcomes many of the discussants lamented the difficulty of finding meaningful improvements. There was much discussion on the forum about reasons why this is and Suneth gives a wonderful description of the potential intangible benefits of such a program. His other argument aligns with my own (self-serving) one: given the high quality of maternity care in Australia, so much of what we do is now tinkering at the edges- adverse events so rare, that it is becoming increasingly difficult to demonstrate improvements. Despite this, the program did manage to demonstrate a trend towards a reduction in complications from shoulder dystocia (an outcome not reported in the VicPROMPT study) which is worthy of ongoing monitoring as the program continues. The finding of poorer documentation post PROMPT is interesting (wart alert!) and should feedback into a review of the program. I also do wonder if increasing use of the Bakri balloon in PPH may reflect increasing practitioner familiarity with a product introduced in 2011 rather than the program itself.

The paper itself suffers somewhat by attempting to condense this vast evaluation into one manuscript and the reader may be left a little confused at times as the paper progresses with little contextualisation for each of the levels assessed. Having said that, the authors have achieved something we should be striving to do more routinely, that is, evaluating a program through multiple lenses, using the data we routinely collect as part of program evaluation and clinical data systems.

To wrap up, this paper and subsequent discussion has highlighted for me:

- Program evaluation is not simple one size fits all
- There is value assessing a program from multiple perspectives and considering a broad range of both qualitative and quantitative outcome measures
- Don't expect overwhelming improvements in patient outcomes (but I'm going to keep looking when I can)
- We need to think about "intangible" benefits and how they might be captured (ideas???)
- We should consider behavioural change theory in program implementation

Thanks again to the Simulcast team for such a great journal club.

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2. Weiner C, Samuelson L, Collins L, et al. 61: 5-year experience with PROMPT (PRACTical Obstetric Multidisciplinary Training) reveals sustained and progressive improvements in obstetric outcomes at a US hospital, 2014:S40-S40.
3. Shoushtarian M, Barnett M, McMahon F, et al. Impact of introducing Practical Obstetric Multi- Professional Training (PROMPT) into maternity units in Victoria, Australia. *BJOG: An International Journal of Obstetrics and Gynaecology* 2014;121(13):1710-18. doi: 10.1111/1471-0528.12767

Summary of this Month’s Journal Club Discussion :

Blog Contributors :

- Luke Summers, Ben Symon, Bec Szabo, Derek Louey, Vic Brazil, Ben Lawton, Suneth Jayasekara

There was quite a breadth of opinion this month with a variety of perspectives, although the meta-conversation on some levels appeared to be focused on justifying why this paper couldn’t find the positive results we would hope for as a group of simulation educators.

Justifying the outcome of the paper

There were a number of acknowledgements as to why the paper had been unsuccessful in providing hard data that an educational intervention can improve clinical outcomes. Luke Summers noted that *“high risk low frequency events... by definition would require massive studies to be able to identify any significant objective improvements”*, whereas Suneth Jayasekara went further, stating that *“I think this study was set out to be a negative study right from the get go. Monash is in all likelihood a mature obstetric centre with highly trained and experienced obstetricians and midwives. To significantly improve the performance of these practitioners in the outcomes they looked at by a 1/2 day course would be very unrealistic.”*

Derek Louey argued that *“The problem is it is difficult to prove that any educational activity improves hard clinical outcomes because of multiple confounders that influence clinical performance.”*.

Vic Brazil on the other hand challenged the underlying premise of the article, arguing that *“The flaw of choosing ‘format driven’ education, on the basis of a binary ‘it works (or not)’ world view. My qualitative research friends would say we need to explore what works, for whom, when, and under what circumstances. Educational interventions are rarely ‘cookie cutter’ and have different impacts in different hands. My thought is that these judgments are what makes a great sim educator.”*

Admiration for the methods used

Multiple comments were made regarding the quality of the study and its choice of methods. Ben Lawton noted that obstetric complications in general appear ripe for this kind of study :

“PROMPT is an inherently attractive course to try and measure the level 4 outcomes for as the patient population it is training people to look after are fairly homogenous (generally healthy women of childbearing age) for whom the vast majority of complications experienced come from a fairly small list and all have an outcome (a baby) who is assessed with a widely accepted and validated outcome measure (an Apgar score) regardless of whether there is a study going on.”

There was appreciation for the paper’s use of [Kirkpatrick’s Framework](#), (Reaction, Learning, Behaviour, Outcome) , although as Vic noted *“Kirkpatrick’s isn’t the only model. Things like ‘logic models’ and other approaches may be better for complex interventions. I am no expert on this but i know where to look..... <https://www.ncbi.nlm.nih.gov/pubmed/22515309>”*

Hope for the future

Suneth Jayasekara argued that while there were only positive trends shown by this particular study, the educational benefits of such interventions may be more successful in less tertiary centres where the levels of experience are not as concentrated. Ben Lawton on the other hand, argued that other PROMPT studies *“have shown improvements in Apgars in big population cohorts after the introduction of PROMPT, which still has the weakness of proving association but not causation. Though this has been demonstrated after the introduction of PROMPT in a few different countries. This might be a bit of a stretch but I can’t help feeling that taken together these trials behave like a clumsy step-wedge study and might be as good evidence as we are going to get for a while that this type of training is effective.”*

Acknowledgements :

Thank you to Dr Janssens for her expert commentary this month.

Thank you to all commenters this month for sharing your thoughts and allowing us to learn from you.

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