Birthing Simulator (SIMMOM) as a Learning Tool for Skills Development in Management of Normal Labour

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ABSTRACT

Background: We aim to compare the effectiveness of traditional video demonstration vs. simulation-based training on Sim-Momin terms of competencies in interns regarding the management of normal labour and to study their perception of both the methods.

Methods: This study will be conducted over 1 year in the department of obstetrics and gynaecology in association with a virtual school of learning at DMIMSDU after acquiring ethical committee clearance. 100 interns of the department of obstetrics and gynaecology will be divided into two groups of 50 each. Group 1 will be provided video lecture-based training on normal labour, Group 2 will be provided birthing simulator (SimMom) used as a learning tool.

Results: There will be a significant improvement in skill-based competencies of trainees who undergo simulation-based learning compared through those who undergo video-based learning for management of normal labour.

Conclusion: Hence simulation-based learning should be part of routine intern training in the curriculum in management of normal labour apart from didactic video sessions for better acquisition of skill-based competencies.

Key Words: SimMom, Normal labour, Skills development

INTRODUCTION

In the present day, outcomes and professional performance are the focal points of one's education. Typically, holistic tasks are used to train, practice and assess the defined outcomes or competencies. Most medical universities are tertiary health care centres where the interns are the first responders in the management of normal labour. Most of these students learn to manage normal labour with traditional teaching that is mainly discipline-based and knowledge oriented. They learn from the experience of their seniors and from the mistakes/deficiencies that occur while managing normal deliveries on real patients. The Outcome of any normal delivery is affected by the prompt and appropriate care dispensed by experienced staff, in which the competency of interns plays an important role. Simulation-based learning (SimMom) of normal labour gives ample opportunity for trainees to learn, practice and finally assess system weak-

nesses and strengths, test policies and thereby improve teamwork and allow for better communication skills and comprehensive management.

Simulations involving team-based work and management are particularly effective in improving communication and coordination amongst team members and thereby enhance their competencies.¹ These simulation-based learning sessions improve patient safety and help to detect undermining factors affecting competencies and reduce them. Despite all the benefits offered simulation-based learning is not yet a major part of interns curriculum. In light of this, the current study aims to evaluate the impact of simulation-based teaching on acquiring skills in the management of normal labours compared to traditional video lecture-based training.

Despite all its benefits birthing, simulator-based learning is not included routinely as a learning and evaluation tool in

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terms of WPBA in OBGY. Hence we aim to study the effectiveness of birthing simulator(simMom) based learning in instilling competency in management of normal in interns of OBGY when compared to traditional video-based lectures. In the present study we will study and compare between traditional video lectures and birthing simulator-based(SimMom) learning in interns regarding the management of normal labour and the perception of trainees about simulation-based learning.

MATERIALS AND METHODS

Study design: A quasi-experimental pilot study

Duration of study: 2020-2021

Place of Study: Department of obstetrics and gynaecology in association with a virtual school of learning, Datta Meghe Institute of Medical Science, Wardha.

Sample Size: 100

Participants: 100 trainees interns.

Methodology: First didactic lecture will be taken for 100 interns of the department of obstetrics and gynaecology. Pre OSCE will be taken then divided into two groups.

Group 1- Video lecture used as a teaching method

Group 2- Birthing simulator (SimMom) used as a learning tool.

Post-training OSCE will be taken.

As either group should not be deprived of teaching-learning method they will be rotated in both groups.

A) WPBA (OSCE)

B) Self-efficiency assessment questionnaire

1. Workplace-based assessment of trainees will be done by single professor blinded for the intervention by using a standardized assessment sheet to assess competencies (checklist) – OSCE

2. Self-efficiency Assessment Scale Based On Badura Model –validated questionnaire which will be answered/filled by trainees.

Evaluators will be sensitized about the whole project and method of pretest and posttest evaluation, but they will be blinded for the type of intervention for posttest. Pretest (WPBA) and student's perception of management of normal labour will be taken before the intervention.

We will conduct a video lecture session for group 1 and simulator-based(SimMom) session for group 2 with participant students. WPBA by evaluators will be done after two

sessions each. The results after video session and SimMom based session will then be compared for significance indifference.

Video session and SimMom based session will be conducted as per the guidelines Royal College of Obstetricians and Gynecologists (RCOG) guidelines.

Expected Outcomes

There will be an improvement in WPBA score after both traditional video lecture and simMom based learning on skill-based competencies of interns in managing normal labour.

The improvement in WPBA score of simulation-based training will be much better than that seen after video sessions on skill-based competencies of trainees in managing normal labour. The perceptions of students regarding their confidence level in diagnosing deviations from normal mechanisms and managing normal labour in various abnormal scenarios(malpresentation and malpositions) will improve more after simulation-based training.

DISCUSSION

In the existing intern's curriculum, students generally learn from didactic lectures, group discussions, seminars, and at the most by video lectures and video demonstration. To manage normal labour effectively and promptly the caretakers need to be competent in all domains which they can acquire through actual practice in simulated scenarios that they perform on SimMom. These simulations are useful for training doctors to manage normal labours and their associated complications better. The simulation also has the potential to evaluate and rate technical skills along with behavioural performance during the management of emergencies, suggesting a role of this as a medium for teaching, learning and evaluation in the management of normal labour.²

Simulation is a term referring to an artificial representation of a real-world process to achieve educational goals through experiential learning. Medical education based on simulation is defined as any educational activity that allows the use of simulation aides to replicate clinical scenarios. Although medical simulation is relatively new, it has been used for a long time in other high-risk professions such as aviation. As Chacko pointed out, simulation-based medical education using best practices and curriculum mapping is the need for the hour to optimize benefits in progress to competency-based medical education.³

Obstetric emergencies are rare occurrences. Providers, therefore, have little real-time opportunities to exercise the requisite clinical, teamwork and communication skills to enhance results. Traditional approaches to teaching – including didactic courses, manuals and guidelines have not been shown

to increase the acceptance of the evidence-based practice.⁴ As recommended by the Royal College of Obstetricians and Gynecology (RCOG), obstetric skills and exercises in the management of normal labour should also be learned and administered locally in all departments. Such courses grow to provide human factor training to improve patient health and to reinforce how teams view undermining and how it can be that. Drills and simulation exercises should be reinforced and encouraged as improved teamwork is undoubtedly a side effect of rehearsal, endorsing the need for expertise to continue repeating practice.⁵ Few studies have been reviewed regarding different aspects of this study. Agrawal et al studied the effectiveness of isosorbide mononitrate in cervical ripening before the induction of labour in full-term antenatal patients.⁶ Phatak et al reflected on transvaginal sonography and elastography evaluation of ectopic pregnancy.⁷ Bhriegu et al assessed maternal and perinatal outcome in postdated pregnancy.⁸ Other pregnancy-related studies were reported different procedures of labour were reported.⁹⁻¹²

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