SimBegin Course and the Simulation-Based Learning: How is it Perceived and its Potential Impact. The Lesson from SaferBirths Bundle of Care Implementation Project.

Paschal Mdoe[1*], Barikiel Hhando[1], Robert Moshiro[2,3], Catherine Massay[1], Beatrice Githiri[1], Vickfarajaeli Daudi[1], Ruhama Lyanga[1], Benjamin Kamala[1,3], Estomih Mduma[1]

[1]Haydom Lutheran Hospital

[2]Muhimbili National Hospital

[3]Muhimbili University of Health and Allied Sciences

***Corresponding Author**

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ABSTRACT

Background: The SimBegin® course prepares facilitators to deliver simulation-based training, which was key in the SaferBirths Bundle of Care (SBBC) implementation program in Tanzania. Despite SBBC's success in reducing maternal and newborn mortality, facilitators' perspectives on SimBegin® and its scalability remain underexplored

Methods: The study, conducted from April to September 2025 in five regions of Tanzania, used a convergent parallel mixed-methods design. Quantitative data were collected via a validated questionnaire, and qualitative data through key informant interviews. Participants were SimBegin®-trained doctors and nurses. Quantitative data were analyzed in Excel, while qualitative data followed Braun and Clarke's six-phase thematic approach.

Results: A total of 71 Respondents completed the survey and 16 participated in interview. The median age was 35 years, with most being diploma-level nurses. Face-to-face training was perceived as most effective. Nearly all respondents (99%) considered SimBegin® course essential for facilitator preparation and scaling simulation-based learning. Effective facilitator preparation and repeated training were considered crit--ical for strengthening competence.

Conclusion: The findings suggest that SimBegin® course is key to enhance facilitators skills and confidence to facilitate simulation-based learning. SimBegin® course is critical for scale up of simulation-based lerning.

Keywords: Simulation-based learning, SimBegin® Course, Facilitators.

BACKGROUND

A traditional training model in medical education, commonly known as "see one, do one, teach one," has been increasingly scrutinized due to concerns about patient safety and the risks associated with inexperienced practitioners [1]. Growing evidence highlights that early clinical exposure without adequate supervision may contribute to medical errors and suboptimal team performance. As a result, simulation-based education has emerged as a safer and more structured alternative for training healthcare providers [2].

Simulation in healthcare education refers to the use of structured, controlled learning environments that replicate clinical scenarios using mannequins, standardized patients, or digital tools, allowing learners to practice skills without risk to real patients [3]. This approach provides an effective bridge between theoretical knowledge and

clinical practice. Evidence suggests that simulation-based training improves clinical competence, teamwork, and decision-making, and contributes to improved patient safety and quality of care[4–6].

Despite these benefits, the adoption of simulation-based education in low- and middle-income countries (LMICs), including Tanzania, remains limited. Key barriers include limited resources, inadequate infrastructure, and a shortage of trained facilitators. However, there is increasing recognition of the need for scalable and sustainable simulation training approaches in these settings [4,5]

Stavanger Acute Medicine Foundation for Education and Research and Laerdal Medical collaboratively developed a blended course named it "the SimBegin® program". SimBegin® is a blended learning faculty development program designed to strengthen facilitators' competence and confidence in planning, conducting, and debriefing simulation sessions. The program is structured in three progressive levels, ranging from foundational facilitation skills to advanced training in human factors, patient safety, and scenario design [7,8].

In Tanzania, the SimBegin® approach has been integrated into the SaferBirths Bundle of Care (SBBC), a national initiative aimed at improving maternal and neonatal outcomes through innovative training and quality improvement strategies [9]. A key component of SBBC is a cascade training model that uses simulation-based, on-the-job training to enhance healthcare providers' skills and promote retention over time. SimBegin® has been instrumental in preparing faculty and regional mentors to implement and scale these training activities effectively [10].

However, despite the widespread implementation of SimBegin® within SBBC, there is limited empirical evidence examining participants' perceptions of the program and its influence on the rollout and sustainability of simulation-based training in Tanzania. This study therefore assessed the perceptions of SBBC faculty and regional mentors regarding the SimBegin® course and the perceived contribution to the scale-up of simulation-based education in Tanzania and similar LMIC settings.

METHODS

Study design: A convergent parallel mixed-methods design, as described by John W. Creswell, was employed. Quantitative and qualitative data were collected concurrently between April and September 2025, analyzed separately, and subsequently integrated during interpretation to triangulate findings.

The quantitative component utilized a structured, pre-tested questionnaire to assess respondents' demographic characteristics, level of SimBegin® training, number of simulation sessions facilitated, and satisfaction with the training. In addition, respondents' perceived impact of the course on their knowledge and its contribution to the scale-up of the SaferBirths Bundle of Care (SBBC) were assessed.

The qualitative component involved key informant interviews (KIIs) to gain an in-depth understanding of participants' experiences and perceptions of the SimBegin® course and its implementation within SBBC. The mixed-methods approach enabled both breadth (quantitative) and depth (qualitative) in exploring the research objectives [11].

Study sites: The study was conducted across SBBC implementation regions in Tanzania. Participants were drawn from regional and district hospitals, as well as health centres involved in SBBC implementation. Detailed descriptions of these settings have been reported elsewhere [9].

Study respondents, sampling and recruitment: The study population comprised SBBC simulation facilitators. At the time of the study, 75 facilitators had been trained, including 17 faculty members who had completed SimBegin® Level III training.

For the quantitative component, all eligible facilitators were invited to participate, and 71 completed the online questionnaire (response rate: 94.7%).

For the qualitative component, purposive sampling was used to select 16 participants to ensure representation across professional cadres and levels of experience. The sample included 10 midwives and 6 medical doctors. Participants were contacted and invited to participate in KIIs at a time and location convenient to them. Written informed consent was obtained prior to participation.

Qualitative data collection and analysis: KIIs were conducted by two experienced researchers: a senior obstetrician with over 15 years of qualitative research experience and an anthropologist with 8 years of experience in conducting KIIs. Interviews were conducted in Kiswahili, audio-recorded, transcribed verbatim, and translated into English. To ensure accuracy, transcripts were reviewed against audio recordings.

Interviews lasted 30–60 minutes and continued until data saturation was reached, defined as the point at which no new themes emerged [12,13].

Data were analyzed thematically following the six-phase framework by Virginia Braun and Victoria Clarke [14]. Coding was conducted independently by three researchers using an inductive approach. Discrepancies were resolved through discussion and consensus, with a fourth researcher acting as an arbitrator. Codes were then organized into themes and subthemes reflecting key patterns in the data.

To enhance trustworthiness, member checking was conducted by returning transcripts to participants for verification[15].

Quantitative descriptive data collection and analysis: Quantitative data were collected using a structured questionnaire distributed via email and WhatsApp. The tool was pre-tested to ensure clarity and relevance. Data were analyzed using Microsoft Excel to generate descriptive statistics, including frequencies and proportions, and results were presented using tables and graphs.

RESULTS

In table 1, 71 (out of 75 reached) responded to our questionnaire, had a median age of 35 years (IQR: 33–42), predominantly female (63%). Most participants were nurse/midwives (89%) with diploma-level education (72%). Respondents were fairly distributed across five regions, and mainly worked in district hospitals (46%), followed by health centers (30%) and regional referral hospitals (24%).

Table 1. Demographic characteristics

Variables	**N = 71**
Age of respondents – median (IQR)	35 (33, 42)
Sex	
female	45 (63%)
Male	26 (37%)
Cadre	
Medical doctor	8 (11%)
Nurse/midwife	63 (89%)
Education level	
Certificate	8 (11%)
Diploma	51 (72%)
Bachelor’s degree	9 (13%)
Postgraduate degree	3 (4.2%)

Region of work	
Geita,	13 (18%)
Manyara	15 (21%)
Mwanza,	17 (24%)
Shinyanga	12 (17%)
Tabora	14 (20%)
Level facility work	
Health center	21 (30%)
District hospital	33 (46%)
Regional referral hospital	17 (24%)

Table 2 show that among 71 respondents, most received SimBegin® within six months (59%) and attended two-week courses (79%), facilitated mainly through blended approaches (61%) by both local and international trainers (55%). Face-to-face delivery was most impactful (91%). Most rated training quality as very good (89%), and nearly all affirmed its importance in equipping facilitators and supporting SBBC scale-up, particularly in improving service quality, skills, confidence, and data

Table 2. Respondents' information regarding SimBegin®

	N = 71
When did you last received the SimBegin® training?	
Within the last six months	42 (59%)
More than 6 months	29 (41%)
How long did the course/training take including practice?	
1 week	3 (4.2%)
2 weeks	56 (79%)
3 weeks	8 (11%)
4 weeks +	4 (5.6%)
Who trained you?	
Local facilitators	5 (7.0%)
International facilitators	27 (38%)
Both	39 (55%)
What was the mode of facilitation?	
Face-to-face only	26 (37%)
Online only	2 (2.8%)
Both online and face-to-face	43 (61%)
Which one was the most impactful on your view?	
Face to face	65 (91%)
Online	6 (9.3%)
How many SimBegin® courses did you attend?	

1-2	49 (69%)
>2	22 (31%)
Rate the quality of the most recent training you have attended	
Not applicable	5 (7.0%)
Good	3 (4.2%)
Very good	63 (89%)
Is SimBegin® course important to equip you as an SBBC facilitator?	
Yes	71 (100%)
SimBegin® course has a role in Simulation training roll-out?	
Yes	70 (99%)
Roles of SimBegin® Course in the scale-up of SBBC	
Improve skills and Knowledge to Facilitators	25 (35%)
Improve competence and confidence to Facilitators	23 (32%)
Capacity building	5 (7.0%)
Help to conduct clinical debriefing	15 (21%)
Positive change of Altitude among HCWs	24 (34%)
Improve the use of data in decision making	21 (30%)
Quality improvement of services	43 (61%)

Key Informant Interviews findings

Two main themes emerged from the KIIs; it is appropriate to prepare facilitators and repeated training to strengthens facilitators' competence

Appropriate to prepare facilitators

Respondents acknowledged the appropriateness of SimBegin®, which helped to learn about the learning process that a participant needs to go through. Understanding these processes helped them to become more confident. The course enabled them to know at what point to ask certain questions, when to probe deeper, and which areas needed more attention or improvement. These skills were reported to be very crucial for anyone who was facilitating a training process

"It has really given me the confidence of facilitating the simulation training because as I said that through the course, we have known the learning process that somebody need to go through. So by knowing those process, you become more confident. You know at what junction, Uh, you have to ask certain questions, when you have to go deeper, and what area you need to do what that uh, you need to work on. So those are very very crucial for somebody who is facilitating training process". (Faraja, F)

SimBegin® course provides a structured process that builds a deeper understanding, thus skipping the process and engaging straight into simulation means losing some of the in-depth understanding. Some respondents believed that those who skipped the SimBegin® course missed the important steps of the simulation learning.

"I understand that there are people who just did their simulation training straightforward without attending the SimBegin course, on my side, I think they lack certain kind of power or more deep understanding when you compare with those who did the SimBegin course, because through SimBegin course,there is that cycle of

learning, whereby people are being taken on those six stages of learning. So if you just go straight to the simulation, yes, you can learn something but there are steps that somebody is missing". (Hashimu)

Repeated training strengthens facilitators' competence

Respondents affirmed that it's important to keep practising the training, and repeating it regularly helps to stay competent. The course aimed to enhance facilitators' skills; therefore, it is crucial to take several times.

"…of course, everybody needs the basic course, but after certain period, even if is yearly somebody needs a refresher course, to be reminded while he or she is continuously practising what she has learnt. Because it is the course for the skills you need to do it several times". (Happiness)

The respondent believed that a better understanding and confidence improves through repeated training. The first training was for familiarizing with the process, but the second and third training gave a trainee a deeper understanding, things became more clearer, and the trainee became more confident and skilled through continued exposure and practice

"I can say yes, there is a difference when you are being taught first time, second, and third times. At first time you are orienting yourself on certain matters. So at that time, you don't really gain; you are curious to understand the process. The second and third times, the understanding gets deeper and deeper.[Ok] Yeah, the more you go deeper, the more you understand. The way you go through the process, it becomes more easier in the mind because now the mind captures the process, but first times, Uh, you're still learning so you're not quite confident, you still have a lot of questions to ask yourself, but overtime time you become more confident, you know, the process, you know what to ask, where things are going? [Uhh] So when you have more exposure, you really become good at the matter at hand" (Habibu)

DISCUSSION

The SimBegin® course trainees (study respondents) in our study confirmed that the course was highly effective and appropriate for preparing facilitators for simulation-based training. Respondents emphasized that the course provided a strong foundation in both technical and facilitation skills that are necessary for conducting high-quality simulation sessions. Moreover, they highlighted that repeated participation in the course workshops over time significantly enhanced facilitators' confidence, competence, and consistency in delivering simulation training.

Simulation-based learning (SBL) is a collaborative training which enhances trainees' involvement in all levels of learning. SimBegin® course capacitates facilitators of SBL to prepare and facilitate effective SBL. Our findings confirm the findings reported elsewhere, where SBL was found to enhance self-confidence, learner satisfaction, critical thinking and skills development [16,17]. SBL is found to often be linked to resilience, capability and facilitation competence, which requires low-dose, high-frequency training [18]. In our study, SimBegin® trainees believed that the course was very effective and appropriate to prepare them in facilitating quality SBL. Respondents reported the course to be appropriate for their task of facilitating SBL as they cascaded the SBBC training across five regions in Tanzania.

The appropriateness of a course signifies its capacity to effectively build and enhance the knowledge, skills, and confidence of trainees, enabling them to competently perform the intended tasks or responsibilities [19]. In the context of Simulation-Based Training (SBL), this concept goes beyond mere content delivery; it involves ensuring that the learning experience is practical, relevant, and aligned with the performance needs of the trainees. Respondents in a study by Anbari H, et al emphasized the importance of skill mastery in a safe and controlled environment and the positive impact of advanced technologies, such as virtual simulations, on their learning experiences [20]. Similarly, Respondents in our study found the SimBegin® course appropriate as it successfully bridges the gap between theoretical understanding and real-life application.

The Trainer of Trainees (ToT), referred to here as the facilitator of SBL, played a central role in cascading the training in the scale-up of SBBC in Tanzania, leading to a high impact on the maternal and newborn health [21].

The ToT in the SBBC program took the SimBegin® course up to three times during the program implementation that built their competency to level III. They were key to cascading the simulation-based on job training and mentorship, thus possessed sufficient skills in facilitating SBL. This concurs with the documentation that an effective ToT (facilitator) of SBL must possess not only sufficient subject-matter expertise but also a deep understanding of simulation pedagogy, adult learning principles, and facilitation techniques [22]. Competence in these areas enables the facilitator to design, implement, and evaluate training sessions that are engaging, learner-centred, and outcome-oriented.

Respondents in our study appreciated the repeated training because it strengthened skills and competence. The repeated training is intended to prepare a competent ToT to be able to cascade the SBL. Similarly, Badawi AA et al, [22] emphasized that a ToTs must be well-prepared through effective pre-training and continuous professional development to ensure that they remain knowledgeable, skilled, and adaptable to emerging simulation practices and technologies. Furthermore, empowerment of the ToT, through institutional support, access to resources, and ongoing mentorship, was equally critical, as it enhanced their confidence, motivation, and ability to foster meaningful learning experiences.

We used a convergence parallel mixed-methods design [23] to explore perspectives of trainees of the SimBegin® Course. The qualitative findings were consistent with the quantitative results, suggesting convergent evidence and enhancing confidence in the overall conclusions. Nevertheless, the sample size was relatively small from a single program, thus limiting generalizability. The present study findings call for future studies with a larger diverse sample size.

CONCLUSION

The finding from this study suggests that continuous engagement with the SimBegin® course contributes not only to individual professional growth but also to the overall strengthening and sustainability of simulation training programs.

Data availability: Data sharing is available on request. Contact the corresponding author to request data and materials.

Authors' contribution: PM, BH and EM, designed the study, collected data, analysed the data and drafted the manuscript. RM, BG, VD, RL, and BK took part in data analysis, review the manuscript. All authors read and approved the final manuscript.

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REFERENCES

1. Rodriguez-Paz JM, Kennedy M, Salas E, Wu AW, Sexton JB, Hunt EA, et al. Beyond "see one, do one, teach one": toward a different training paradigm. BMJ Qual Saf 2009;18:63–8. https://doi.org/10.1136/QSHC.2007.023903.
2. Rogathi J, Kidayi P. Simulation-based education advocacy for patient safety in a limited resource country, experiences from Tanzania. Eur J Midwifery 2023;7. https://doi.org/10.18332/EJM/172341.
3. Elendu C, Amaechi DC, Okatta AU, Amaechi EC, Elendu TC, Ezeh CP, et al. The impact of simulation-based training in medical education: A review. Medicine 2024;103:e38813. https://doi.org/10.1097/MD.0000000000038813.
4. Bearman M, Greenhill J, Nestel D. The power of simulation: a large-scale narrative analysis of learners' experiences. Med Educ 2019;53:369–79. https://doi.org/10.1111/MEDU.13747.

5. Auerbach M, Stone KP, Patterson MD. The Role of Simulation in Improving Patient Safety 2016:55–65. https://doi.org/10.1007/978-3-319-24187-6_5.
6. Lamé G, Dixon-Woods M. Using clinical simulation to study how to improve quality and safety in healthcare. BMJ Simul Technol Enhanc Learn 2020;6:87. https://doi.org/10.1136/BMJSTEL-2018-000370.
7. Peterson DT, Watts PI, Epps CA, White ML. Simulation Faculty Development: A Tiered Approach. Simulation in Healthcare 2017;12:254–9. https://doi.org/10.1097/SIH.0000000000000225.
8. Vadla MS, Foss B, Torgeirsen K. SimBegin: an evidence-based entry-level facilitator program. Adi Health + Wellness 2024:1–3. https://doi.org/10.54531/FNAB4270.
9. Kamala BA, Ersdal HL, Mduma E, Moshiro R, Girnary S, Østrem OT, et al. SaferBirths bundle of care protocol: a stepped-wedge cluster implementation project in 30 public health-facilities in five regions, Tanzania. BMC Health Serv Res 2021;21:1117. https://doi.org/10.1186/s12913-021-07145-1.
10. Kamala BA, Moshiro R, Kalabamu FS, Kjetil T, Guga G, Githiri B, et al. Practice, Experiences, and Facilitators of Simulation-Based Training During One Year of Implementation in 30 Hospitals in Tanzania. SAGE Open Nurs 2025;11. https://doi.org/10.1177/23779608241309447.
11. Shrestha S, Giri SA. Mixed-Methods Research: A Discussion on its Types, Challenges, and Criticisms. Journal of Practical Studies in Education 2021;2:25–36. https://doi.org/10.46809/jpse.v2i2.20.
12. Morata L. An evolutionary concept analysis of futility in health care. J Adv Nurs 2018;74:1289–300. https://doi.org/10.1111/JAN.13526.
13. Rahimi S, khatooni M. Saturation in qualitative research: An evolutionary concept analysis. Int J Nurs Stud Adv 2024;6. https://doi.org/10.1016/j.ijnsa.2024.100174.
14. Clarke V, Braun V. Teaching thematic analysis: Overcoming challenges and developing strategies for effective learning. Psychologist 2013;26.
15. Birt L, Scott S, Cavers D, Campbell C, Walter F. Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? Qual Health Res 2016;26:1802–11. https://doi.org/10.1177/1049732316654870.
16. Haynes J, Bjorland P, Gomo Ø, Ushakova A, Rettedal S, Perlman J, et al. Novel Neonatal Simulator Provides High-Fidelity Ventilation Training Comparable to Real-Life Newborn Ventilation. Children (Basel) 2021;8. https://doi.org/10.3390/CHILDREN8100940.
17. Vadla MS, Foss B, Torgeirsen K. SimBegin: an evidence-based entry-level facilitator program. Adi Health + Wellness 2024:1–3. https://doi.org/10.54531/FNAB4270.
18. Folkvord SE, Borlaug T, Risa CF. Midwifery students' experiences after participation in the SimBegin® facilitator course. Nurse Educ Pract 2025;86. https://doi.org/10.1016/j.nepr.2025.104408.
19. Anorue HC, Ekuma JE, Olinya TO, Nwandu LO. Empowering vocational educators instructional delivery through information and communication technology training in universities. Journal of Education and Learning (EduLearn) 2023;17:555–65. https://doi.org/10.11591/EDULEARN.V17I4.20311.
20. Anbari H, Kerari A. Self-Confidence and Satisfaction in Simulation-Based Learning and Clinical Competence Among Undergraduate Nursing Students: A Mixed-Methods Sequential Explanatory Study. Behavioral Sciences 2025;15:984. https://doi.org/10.3390/BS15070984.
21. Kamala BA, Ersdal HL, Moshiro RD, Guga G, Dalen I, Kvaløy JT, et al. Outcomes of a Program to Reduce Birth-Related Mortality in Tanzania. New England Journal of Medicine 2025;392:1100–10. https://doi.org/10.1056/NEJMOA2406295;WGROUP:STRING:MMS.
22. Badawi A Al, Alinier G, Nashwan AJ. Tailoring facilitation strategies to enhance learning outcomes in nursing simulations: A practical guide. Qatar Med J 2025;2025. https://doi.org/10.5339/QMJ.2025.89.
23. Wasti SP, Simkhada P, Teijlingen ER van, Sathian B, Banerjee I. The Growing Importance of Mixed-Methods Research in Health. Nepal J Epidemiol 2022;12:1175. https://doi.org/10.3126/NJE.V12I1.43633.