Piloting of WHO Safe Childbirth Checklist using a modified version in Sri Lanka

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Abstract

Objectives: Data was gathered to study the impact of a context-specific modified WHO Safe Childbirth Checklist (mSCC) at two tertiary care settings in Sri Lanka, as a part of an implementation program.

Data description: We provide data sets of a prospective observational study which was conducted in the University Obstetrics Unit at De Soysa Hospital for Women (DSHW), Colombo and two Obstetric Units at Teaching Hospital, Mahamodara, Galle (THMG), Sri Lanka. These consist of demographic and checklist implementation details and data on the level of acceptance. The study was conducted over 8 weeks at DSHW and over 4 weeks at THMG. Checklists were kept attached to clinical records at admission and collected on discharge. Level of acceptance was assessed using a self-administered questionnaire. Outcome measures were adoption rate (percentage of deliveries where mSCC was used), adherence to practices (mean percentage of items checked in each checklist), response rate (percentage of staff members who responded to questionnaire) and level of acceptance (percentage of “strongly agree/agree” in Likert scale to five questions regarding acceptance of modified SCC).

Keywords: WHO, Safe childbirth, Checklist, Implementation

Objective

There are more than one hundred and thirty million births in the world annually. These yield in an estimated 287,000 maternal deaths [1], one million intrapartum stillbirths [2] and three million newborn deaths [3]. Approximately 99% (302,000) of these occur in resource-limited settings and would have been prevented with timely, effective interventions [2, 3]. Substandard care during institutional childbirth is has been recognized as a major contributory factor for childbirth-related harms [4]. Although skilled-attendants may be available in healthcare facilities, they may fail to adhere to accepted protocols due to the failure to remember critical steps and the sequence in which to correctly execute them. A simple checklist that focuses on major causes of maternal mortality and morbidity could overcome these failures [5]. Identifying this need, the World Health Organization (WHO) designed the Safe Childbirth Checklist (SCC) [6, 7]. As recommended by the WHO [8], we included context-specific adaptations in the mSCC in the hope of addressing weaknesses that may have contributed to the low adoption rate in our previous study [9].

This study was conducted to assess if a more context-specific modified SCC (mSCC) would result in an improved adoption rate. The results based on these data has been published in BMC Pregnancy Childbirth [10].

Data description

These data were gathered for a hospital-based, prospective observational study which was carried out in Sri Lanka in the University Obstetrics Unit of De Soysa Hospital for Women (DSHW), Colombo and two Obstetric Units in the Teaching Hospital, Mahamodara, Galle (THMG), two busy tertiary care maternity hospitals in Sri Lanka. Before the introduction of the intervention, the necessary basic education was given to healthcare workers. This consisted of the components of modified mSSC, its relevance to patient safety and quality improvement and how and when to use it. The staff was advised to mark the mSCC items in parallel to the practice of each item, optimizing the value of a checklist in

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clinical practice. The mSCC was kept attached to clinical notes of every mother from admission to the ward to the point of discharge when they were collected into a separate file. Outcome measures were adoption rate (percentage of deliveries where the mSCC was used during the study period), adherence to practices (mean percentage of each item checked in mSCC out of the total in each setting), response rate and the level of acceptance.

The level of acceptance was assessed using a self-administered, pre-tested anonymous questionnaire at the end of the study period given to all staff involved and a link to a copy of the questionnaire have been provided as in Table 1 [12]. The response rate was the percentage of healthcare providers who responded to this questionnaire. The questionnaire included a five-point Likert scale for five stems focusing on the level of acceptance of SCC use and one open-ended question on the barriers to its use. The answers ‘strongly agree’ and ‘agree’ from the Likert scale were taken as satisfactory levels of acceptance and presented as percentages. Data have been entered in SPSS Spreadsheets and included in Table 1 [11, 12]. Ethical aspects of this study were reviewed and approved by the Ethics Review Committee of the Faculty of Medicine, University of Colombo, Sri Lanka (EC-16-108). Informed written consent was taken from each participant before giving the questionnaire. A copy of the mSCC has been provided as a supplementary file as indicated in Table 1 [13]. It is also available in the study published in BMC Pregnancy Childbirth 2018 [10].

**Limitations**

- This is an observational study without a control group and data was collected from a self-administered questionnaire.
- The data in this study may be more specific to Sri Lanka, where the standard of care is of a better quality compared to most developing countries.
- Looking at checklists that were filled out could overestimate or underestimate its use.
- It is possible that the checklists were simply filled out after delivery or at discharge and not in real time.
- It is also possible that some used the mSCC as a guide, without filling it out.
- Even though authors reinforced their knowledge and attitudes using the Implementation Guide from time to time, this step does not involve a direct unbiased observations.
- When compared to the previous studies from sites in the world which have been conducted with well-planned coaching-based interventions, this study has been conducted with a relatively light-touch intervention.

**Abbreviations**

WHO: World Health Organisation; SCC: Safe Childbirth Checklist; DSHW: De Soysa Hospital for Women; THMG: Teaching Hospital Mahamodara, Galle; mSCC: Modified Safe Childbirth Checklist.

**Authors' contributions**

Conceived and designed the experiments: HMS, MP, RR. Performed the experiments: RR, MP. Analyzed the data: MP, RR, HMS. Contributed reagents/materials/analysis tools: RR, MP, HMS. Wrote the paper: MP, RR, HMS. All authors read and approved the final manuscript.

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**Competing interests**

The authors declare that they have no competing interests.

**Availability of data materials**

The data described in this Data note can be freely and openly accessed on [Figshare]. Please see Table 1 and reference list for details and links to the data.

**Consent for publication**

Not applicable.

**Ethics approval and consent to participate**

Ethical aspects of this study were reviewed by the Ethical Review Committee of the (EC-16-108), Faculty of Medicine, University of Colombo, Sri Lanka, which granted approval. Informed written consent was taken from each participant before giving the questionnaire.
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References
1. WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Trends in maternal mortality: 1990–2015. 2005. Geneva: WHO http://www.who.int/reproductivehealth/publications/monitoring/maternal-mortality-2015/en/. Accessed 25 Apr 2018.
2. Cousens S, Blencowe H, Stanton C, Chou D, et al. National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. Lancet. 2011;377:1319–30.
3. Rajaratnam JK, Marcus JR, et al. Neonatal, postnatal, childhood, and under-5 mortality for 187 countries, 1970–2010: a systematic analysis of progress towards Millennium Development Goal 4. Lancet. 2010;375:1988–2008.
4. Van den Broek NR, Graham WJ. Quality of care for maternal and newborn health: the neglected agenda. BJOG. 2009;116:18–21.
5. Bullough C, Meda N, et al. Current strategies for the reduction of maternal mortality. BJOG. 2005;112:1180–8.
6. Spector JM, Agrawal P, et al. Improving quality of care for maternal and newborn health: prospective pilot study of the WHO Safe Childbirth Checklist Programme. PloS ONE. 2012;7:1–7.
7. WHO. WHO Safe Childbirth Checklist. Geneva: WHO, 2015. http://www.who.int/patientsafety/implementation/checklists/childbirth/en/. Accessed 15 Apr 2018.
8. World Health Organization. WHO Handbook for Guideline Development, 2nd Ed. Geneva: WHO, 2014. http://apps.who.int/medicinedocs/en/d/Js22083en/. Accessed 06 Aug 2017.
9. Patabendige M, Senanayake H. Implementation of the WHO safe childbirth checklist program at a tertiary care setting in Sri Lanka: a developing country experience. BMC Pregnancy Childbirth. 2015;15:12.
10. Senanayake HM, Patabendige M, Ramachandran R. Experience with a context-specific modified WHO Safe Childbirth Checklist at two tertiary care settings in Sri Lanka. BMC Pregnancy Childbirth. 2018;1:1411.
11. Patabendige M, Senanayake HM, Ramachandran R. DSHW and THMG Combined data.sav. figshare. Filesset. 2018. https://doi.org/10.6084/m9.figshare.7176176v2.
12. Patabendige M, Senanayake HM, Ramachandran R. Pre checklist attitude combined data.sav. figshare. Dataset. 2018. https://doi.org/10.6084/m9.figshare.7176179v3.
13. Patabendige M, Senanayake HM, Ramachandran R. Modified version of WHO Safe Childbirth Checklist. figshare. Paper. 2018. https://doi.org/10.6084/m9.figshare.7399457.v1.