International Journal of Community Medicine and Public Health
Lihanda P et al. Int J Community Med Public Health. 2024 Feb;11(2):671-677
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20240253

Original Research Article

Healthcare providers factors influencing the uptake of WHO modified safe child birth checklist in management of pre-term births among healthcare workers in Migori County, Kenya

Priscah Lihanda[1]*, Esther Muitta[2], Faith Muhonja[3]

[1]Department of Epidemiology and Biostatistics, Mount Kenya University (MKU), Thika, Kenya
[2]School of Public Health, Murang'a University of Technology (MUT), Murang'a, Kenya
[3]Department of Epidemiology and Biostatistics, Amref International University- Nairobi. Kenya

Received: 16 November 2023
Accepted: 09 January 2024

***Correspondence:**
Priscah Lihanda,
E-mail: plihanda@gmail.com

ABSTRACT

Background: The World Health Organization introduced the safe childbirth checklist in 2015 to address high rates of maternal mortality and preterm deliveries. The checklist varies based on geography and socioeconomic position. Healthcare professionals in developing nations lag behind those in developed nations, with less than sixty percent using the checklist routinely in African nations.
Methods: Analytical cross-sectional study design was used and 140 participants in the selected public health facilities in Migori County, Kenya. Data was collected using administered structured questionnaire, and Key Informant Interview. Quantitative data analysis was conducted using SPSS version 26.0 and involved univariate and bivariate analysis. Bivariate analysis was done through logistic regression was used to test the significance of the association between the dependent and independent variables ($p<0.05$). Qualitative data was analyzed by thematic content analysis.
Results: Almost three-quarter of respondents 100 (71.4%) use the WHO safe childbirth checklist, with 80 (78.4%) of nursing officers and 22 (75.9%) of respondents aged between 40-49 years had higher uptake of WHO modified safe childbirth checklist. Cadre (χ^2=9.030; df 1; p=0.003), understanding what mSCCL is all about (p=0.0001), aware mSCCL is available in maternity unit (p=0.0001), and understanding the pause points in the mSCCL (p=0.006) were significantly associated with uptake of WHO modified safe childbirth checklist.
Conclusions: Healthcare institutions should prioritize comprehensive training programs on the mSCCL, incorporating peer-led initiatives and experienced healthcare workers for practical insights and shared experiences.

Keywords: Modified safe child birth checklist, Preterm births, Pregnancy-related deaths, Public health facilities, Safe child birth

INTRODUCTION

The WHO Safe Childbirth Checklist (SCC) was created in 2015 to address the issue of maternal mortality and stillbirths, which are the leading causes of pregnancy-related deaths worldwide. The checklist consists of 29 evidence-based practices covering four time points: admission, during or around childbirth, and before discharge. Preterm birth is the direct cause of about three million neonatal deaths each year and is the second leading cause of death in children under five.[1] The WHO safe childbirth checklist aims to ensure essential prenatal and postnatal care, covering the main reasons why mothers and babies die, such as birth asphyxia, infections,

and problems caused by being born too early. It encourages women living in areas where complications during birth are likely to occur to give birth in hospitals.[2] However, its utilization varies greatly worldwide, with healthcare workers in poor countries often lag behind those in developed countries. In Africa and most developing countries, less than 60% of healthcare workers regularly utilize the WHO Safe Childbirth Checklist.[3]

High-quality maternity care relies on experienced healthcare personnel, essential resources, evidence-based guidance, and an enabling environment. Safe childbirth check lists (SCC) adherence is crucial for provider responsibility, nurse empowerment, and first problem treatment.[4] To improve SCC adherence, modifications were made to the system, such as using PDSA methodology in Namibia. This approach shifted from a physician-to-nurse model to a peer-to-peer approach, enhancing acceptability and ownership. Despite initial resistance, implementing the WHO SCC through PDSA cycles led to increased adherence to Evidence-Based Practice (EBP).[5] The use of peer and facility advocates, along with coaching, increased the check-list adoption rate. A cross-sectional survey in Zambia found that 52.0% of nurses who adhered to the checklist had over 10 years of working experience. In North West Ethiopia, clinicians with 15 years and below were nearly twice as likely to use the checklist effectively.[6,7] Age is related to experience in managing preterm conditions, and older healthcare workers tend to use their experience rather than documented evidence. In rural India, the age status of healthcare personnel did not significantly affect the utilization of the WHO Safe Childbirth Checklist, but professional experience did. Studies in Singapore and Iran found significant differences in the management of preterm babies based on the educational level of clinicians. Female and younger healthcare workers with a mean of one to five years of service practiced better towards the adoption of the WHO safe childbirth checklist in pediatric wards than in outpatient departments.[8–10]

Staff attitude also plays a role in the filling of the mSCCL, as it may be influenced by the use of the check-list, changes in systems, and changes in the behavior of individual surgical teams. Higher-level healthcare workers may perform less well in following new guidelines compared to lower-level counterparts. Nurse midwives may have a positive or negative attitude towards the introduction of new tools.[11] In Migori, nurse midwives were trained by staff members, but quality improvement methodology was not used. A pilot study in India found that all providers started using the SCC after the introduction, with those who participated in tool orientation using it more correctly. Proper orientation from clinical and administrative leaders also increased the likelihood of SCC check-list adoption. Efforts are being made to increase the use of the WHO safe childbirth checklist in Migori County, Kenya, through sensitization at both the facility and community level. The modified WHO Safe Childbirth Checklist (mSCCL) is organized around five pause points: triage, admission, just before and during 2nd and 3rd stage, soon after birth within one hour, and shortly before discharge.[12] Despite the success of the SCC, there is limited research on its usage and the relationship between it and pregnancy-related problems. To avoid pregnancy-related problems and deaths in health facilities, interventions that enhance adherence to fundamental birth practices must be implemented.

METHODS

This was an analytical cross-sectional design using both quantitative methods (issuing self-administered questionnaires to the obstetricians, paediatricians, nurses, clinical officers, and midwives) and qualitative methods (use of key informant interviews from departmental heads and hospital administration especially the hospital administrators, medical superintendent, hospital matrons, and maternity in charge) from selected Migori County health facilities with the data collection done between May 2023 to July 2023. Systematic random sampling method was used among 140 respondents from Migori County Referral Hospital, Awendo sub county hospital, and Rongo sub county hospital. The study included respondents working at maternity, MCH and anaesthesia department of Migori County, healthcare workers in selected facility for more than one month, and respondents who were willing to participate and consented for the study. Further, it excluded respondents from private ownership and healthcare workers working at Migori County who were on leave. Self-administered structured questionnaires were used to collect quantitative data while Key Informant Guide was used to collect qualitative. Quantitative data was analyzed using statistical package for social science (SPSS) version 27.0. Descriptive data was presented using frequencies, percentages, means and standard deviation while inferential statistics used chi-square test to measure association between independent and dependent variables. P values less than 0.05 were considered statistically significant.

RESULTS

Socio-demographic characteristics of study respondents

Out of 140 health workers, 67 (47.9%) were aged between 30-39 years. As shown in the table 4.1 78 (55.7%) were female, with nurses 102 (72.9%) contributing the highest number, clinic officers 33 (23.6%) and medical officers 5 (3.6%) were the least healthcare workers. Most 66 (47.1%) of the respondents had diploma as their highest attained education level followed by 47 (33.6%) had higher diploma and the least 1 (0.7%) had masters. Regarding work experience, 75 (53.6%) had a working experience of 7 years and above and 75 (54.3%) have been working in selected health

facilities for less than four years during the time of the study (Table 1).

Table 1: Socio-demographic characteristics of study respondents.

Characteristics		Frequency	Percent
Age (years)	18-29	32	22.9
	30-39	67	47.9
	40-49	29	20.7
	50 and above	12	8.6
Gender	Male	62	44.3
	Female	78	55.7
Highest level of education	Diploma	66	47.1
	Higher diploma	47	33.6
	Degree	26	18.6
	Masters	1	0.7
Basic training	Nursing	102	72.9
	Clinical medicine	33	23.6
	MBChB	5	3.6
Experience as a health professional (years)	1-3	37	26.4
	4-6	28	20.0
	7-9	42	30.0
	≥10	33	23.6
Duration at facility (years)	Less than one year	19	13.6
	1-3	57	40.7
	4-6	44	31.4
	7-9	16	11.4
	≥10	4	2.9

Uptake of WHO modified safe childbirth checklist

Almost three-quarter of respondents 100 (71.4%) use the WHO safe childbirth check list (Figure 1).

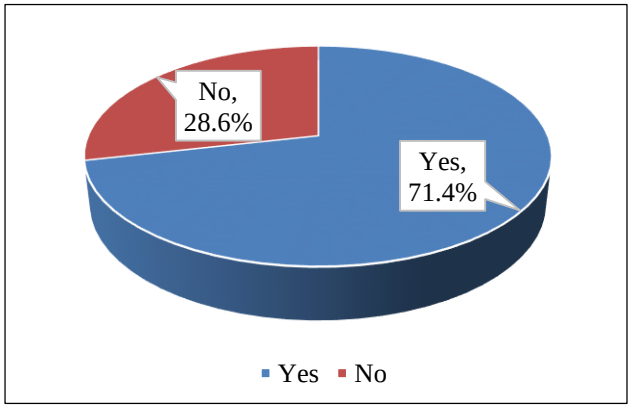

Figure 1: Adequacy of toilets.

When asked how the mSCC could be improved for future uptake, key informants were positive towards checklists. At the same time, some felt that it should be expanded to include more space for clinical notes – underscoring how this tool was often used as a documentation tool.

"There has been improvement in uptake of the Modified Safe Childbirth Checklist in the recent years, it is very useful but, is there a way in which it can be compressed more so that we have less questions but all are covered so that we don't repeat all the question all the time…." (KII 4).

"What I can comment about its usage and availability - the hospital needs to have an active administrative aim so that they are able to make photocopies and we attach them in the files because we make the files locally. And I think it's possible, surely its possible, because we do a lot of photocopies for other files so adding this tool for as long as it's helpful and its utilization will increase" (KII 1).

Perception towards WHO modified safe childbirth checklist

Majority of respondents (96.4%) and 89.3% mentioned that WHO safe childbirth checklist enhances communication and collaboration between staff and it is not difficult to implement the mSCCL checklist (Figure 2).

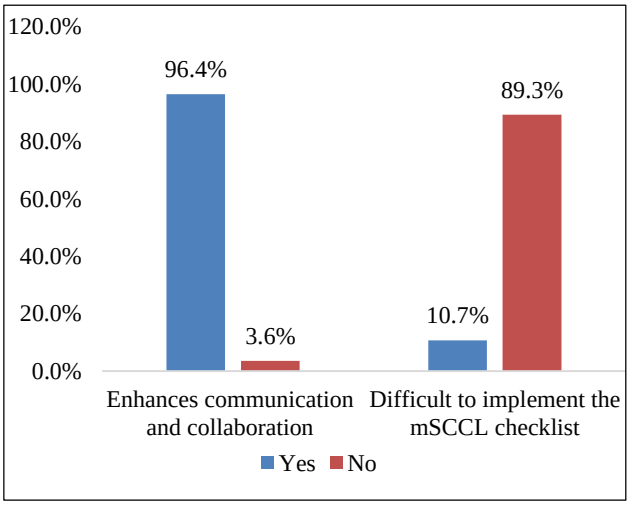

Figure 2: Perception towards WHO modified safe childbirth checklist.

Socio-demographic characteristics influencing uptake of WHO mSCCL

Further analysis with an aid of chi-square test was carried out in order to establish association between respondent's socio-demographic characteristics and uptake of WHO modified safe childbirth checklist. The Pearson chi-square shows that 80(78.4%) of nursing officers and 22 (75.9%) of respondents aged between 40-49 years had higher uptake of WHO modified safe childbirth checklist. Cadre was significant association between cadre (χ^2=9.030; df 1; p=0.003) with uptake of WHO modified safe childbirth checklist, however, there was no significant association between age (χ^2=1.541; df 3; p=0.673) with uptake of WHO modified safe childbirth checklist. Additionally,

gender (χ^2=0.012; df 1; p=0.914), working experience (χ^2=0.865; df 3; p=0.834), and duration at facility (χ^2=0.685; df 2; p=0.710) had no statistical relationship with uptake of WHO modified safe childbirth checklist (Table 2).

There was a clear desire from many key informants that they hoped the mSCCL would continue beyond the tenure. Many recognized, however, the role of ministry or facility administration in making it sustainable.

Table 2: Socio-demographic characteristics influencing uptake of WHO mSCCL.

Variables		Yes (%)	No (%)	Statistics
Age (years)	18-29	24 (75.0)	8 (25.0)	χ^2=1.541; df 3; p=0.673
	30-39	47 (70.1)	20 (29.9)	
	40-49	22 (75.9)	7 (24.1)	
	50 and above	7 (58.3)	5 (41.7)	
Gender	Male	44 (71)	18 (29)	χ^2=0.012; df 1; p=0.914
	Female	56 (71.8)	22 (28.2)	
Cadre	Nursing	80 (78.4)	22 (21.6)	χ^2=9.030; df 1; p=0.003
	CO/MBChB	20 (52.6)	18 (47.4)	
Experience as a health professional (years)	1-3	25 (67.6)	12 (32.4)	χ^2=0.865; df 3; p=0.834
	4-6	21 (75.0)	7 (25.0)	
	7-9	29 (69.0)	13 (31.0)	
	≥10	25 (75.8)	8 (24.2)	
Level of Education	Diploma	47 (70.1)	20 (29.9)	χ^2=0.123; df 2; p=0.940
	HND	38 (73.1)	14 (26.9)	
	Degree and above	15 (71.4)	6 (28.6)	
Duration at facility (years)	≤3	54 (71.1)	22 (28.9)	χ^2=0.685; df 2; p=0.710
	4-6	33 (75)	11 (25)	
	≥7	13 (65.0)	7 (35.0)	

"Every staff has an obligation to do the necessary, fill the mSCCL appropriately… I think we need to make it mandatory for every staff and put to task the for the sustainability. New staff be trained regularly and given the opportunity to be filling it so that it become a norm" (KII 2).

A key informant noted that the checklist lacks participation of medical officers.

"The most recent version we got is better, it is easy to use, and have been accepted by majority of staff, thus they always utilize it, but there is need for additional space for Doctor's notes and the observations, in order for doctors to utilize it" (KII 4).

Healthcare providers determinants of uptake of WHO mSCCL

Table 3 shows the analysis of determinants of healthcare providers on uptake of WHO mSCCL. Most of respondents 99 (79.2%) understanding what mSCCL is all about utilized WHO modified safe childbirth checklist. In addition, 86 (82.7%), and 25 (92.6%) of respondents aware that mSCCL is available in maternity unit and very well understand the pause points in the mSCCL. Further, understanding what mSCCL is all about (p=0.0001), aware mSCCL is available in maternity unit (p=0.0001), and understanding the pause points in the mSCCL (p=0.006) were significantly associated with uptake of WHO modified safe childbirth checklist.

Table 3: Healthcare providers determinants of uptake of WHO mSCCL.

Variables		Yes (%)	No (%)	Fisher exact test
Understand what mSCCL is all about	Yes	99 (79.2)	26 (20.8)	p=0.0001
	No	1 (6.7)	14 (93.3)	
mSCCL available in maternity unit	Yes	86 (82.7)	18 (17.3)	p=0.0001
	No	2 (66.7)	1 (33.3)	
	Not sure	12 (36.4)	21 (63.6)	
Understand the pause points in the mSCCL	Do not know about pause points	8 (72.7)	3 (27.3)	p=0.006
	Not Sure	42 (59.2)	29 (40.8)	
	Somehow	25 (80.6)	6 (19.4)	
	Very well	25 (92.6)	2 (7.4)	

The mSCC was initially regarded as an additional burden, largely because of its length. Competing workload and responsibilities, as well as onboarding of new providers/staff, were identified as barriers to uptake, since majority were not aware of what it entails.

"We used to have few staff trained on mSCCL and had knowledge on what it entails, additionally, it wasn't a need at maternity ward. ... but again, it was introduced, although when there were many mothers and inadequate staff, tend to miss filling them. So, despite the fact that it is informative most staff fail to fill them especially when we have high workload. (KII 1).

"…Actually, some staff were not interested, others did not know how to use it or what it entails and could not fill some parts. But after training majority are aware of mSCCL, and what it entails" (KII 3).

DISCUSSION

The study found that 22 (75.9%) of respondents aged between 40-49 years had higher uptake of WHO modified safe childbirth checklist, however, there was no significant association between age with uptake of WHO modified safe childbirth checklist. Similarly, a study by Miller found that it is highly associated with age, more than with any other socio-demographic variables.[13] This is so because the practices of older healthcare workers are quite different from those of newly admitted clinicians with regard to management of any medical condition, they believe they are more qualified. Study findings of Singh et al. who explored the impact of age of nurses had no adoption of WHO safe childbirth checklist in rural India.[14] They found that health care workers age status did not have any significant association with utilize WHO safe childbirth checklist but there was strong association with professional experience. This result was attributed to the homogeneity of health care workers age in the area; only 37 out of 165 healthcare workers interviewed were younger than 30 years.

The study found that nursing officers had higher uptake of WHO modified safe childbirth checklist and there was a significant association between cadre with uptake of WHO modified safe childbirth checklist. Additionally, most of respondents 99 (79.2%) with understanding of what mSCCL is all about utilized WHO modified safe childbirth checklist. Further, understanding what mSCCL is all about was significantly associated with uptake of WHO modified safe childbirth checklist. This is consistent with a study by Roberts et al that found the capacity of quality of care for maternity services is influenced by skilled health care workers performing essential practices, availability of essential resources, and appropriate evidence-based guidance for an action and overall enabling environment including effective organization of the health care services.[15] A study done in Iran showed a strongly positive correlations between medical officer, master's degree, ward type or work setting and length of employment and female and younger healthcare workers who had a mean of one to five years of service practiced better towards adoption of WHO safe childbirth checklist in pediatric wards than in outpatient department.[16] A study by Dearing & Cox found that the important determinants of safe child birth check list adherence awareness of WHO safe child birth check-list.[17] Kabongo et al found out that implementing the WHO SCC using PDSA cycles developed an approach reflecting local context, which resulted in improvement in Evidence Based Practice (EBP) adherence.[5] In this context the use of coaches to support adoption, and the use of peers and facility champions increased the uptake of the check-list. In a pilot study done in India, to test the basic implementation approaches, usability of the check-list, general design and appropriateness of content in the context of Rajasthan district.[8] Results of the study by Miller et al showed that all providers started using the check-list upon introduction, but the providers who had participated in the orientation to the tool were found to be using it more appropriately than those who had not.[13]

The study found that the uptake of WHO modified safe childbirth checklist was higher among respondents with high work experience and working in the facility between 4-6 years, however, working experience, and duration at facility had no statistical relationship with uptake of WHO modified safe childbirth checklist. This concurs with a study by Dearing & Cox, in a cross-sectional survey of 306 nurses in public hospitals in Zambia indicated that the majority of the participants who adhered to world health organization modified safe child birth checklist effectively had working experience of over 10 years, representing 52.0% of the study population.[17] A study Keith et al in North West Ethiopia, result of logistic regression analysis showed that clinicians with working experience of 15 years and below were nearly two times more likely to utilize WHO Safe Childbirth Checklist effectively compared to their counter parts.[18] This differs with the Migori context where the nurse midwives in maternity unit were trained by the staffs who had been trained and oriented on the mSCCL and taken through all the steps on how to fill the check-list, this was then followed by the distribution of the check-list to the maternity units for the implementation. The quality improvement model was not used in this context however the mentoring of staffs on monthly basis during Continuous Medical Education (CME) was done by the staff mentors and the maternity in charges.

The study was limited to the intermediate and the referral hospital, maternity departments only since these are facilities that have functional operation theatre rooms for mothers scheduled or for emergency caesarean sections and therefore its findings cannot be generalized to other hospitals countrywide. Time was limited especially taking into consideration the whole process from proposal, data collection, analysis and production of the final report; and the fact that the researcher was also an employee and needed to deliver at work too. Also, the researcher was

faced with some difficulties in meeting the costs related to the study especially printing and stationers as well transport costs and lunch allowance to the supporters/assistants considering that the researcher was a self-sponsored student.

CONCLUSION

It can be concluded from this study that almost three-quarter of respondents use the WHO safe childbirth check list and it was mentioned to enhance communication and collaboration between staff and it is not difficult to implement the mSCCL checklist as well more than half like using WHO safe childbirth checklist. The study revealed that cadre, understanding what mSCCL is all about, mSCCL available in maternity unit, and understanding the pause points in the mSCCL were significantly associated with uptake of WHO modified safe childbirth checklist. There is need for hospital management, donors and other stakeholders to provide continuous training to health workers with specific focus on use of WHO modified Safe Childbirth Checklist through on- job trainings, mentorship for those already working and for sustainability, strengthening the curriculum in health training institutions through integrating WHO modified Safe Childbirth Checklist in all cadres. Also, there is need for the healthcare workers should prioritize ongoing and comprehensive training programs for healthcare workers on the mSCCL. These programs should focus not only on checklist content but also on the rationale behind its use and its potential impact on improving maternal and neonatal outcomes. Building on the success of peer-to-peer training methods observed in this study, healthcare institutions should consider incorporating more peer-led training initiatives. Experienced healthcare workers can play a pivotal role in training their colleagues, ensuring practical insights and shared experiences.

ACKNOWLEDGEMENTS

Special gratitude goes to school of public health for guidance and support. Sincere gratitude to all administrators in the selected public health facilities and county department of education, Migori County director of health, and respondents who took part to make this study successful.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Mount Kenya University- Ethical Review Committee and a permission by National Commission for Science, Technology and Innovation, Kenya

REFERENCES

1. World Health Organization. WHO safe childbirth checklist collaboration: Evaluation report. World Heal Organ Libr. 2018;36(24):611-786.
2. Jhpiego. Saving babies' lives: a simple checklist is making a remarkable difference in the labour rooms of Rajasthan. Public Heal Found India. 2016;82(27):600-608.
3. Nghifikwa J. Assessment of quality of midwifery care during labour at maternity departments of intermediate and referral hospital in Namibia. Reprod Health. 2021;131(42):992-8.
4. Delaney MM, Maji P, Kalita T, Kara N, Rana D, Kumar K, et al. Improving adherence to essential birth practices using the who safe childbirth checklist with peer coaching : experience from 60 public health facilities in Uttar Pradesh, India. Glob Heal Sci Pract. 2018;5(2):217-231.
5. Kabongo L, Gass J, Kivondo B, Kara N, Semrau K, Hirschhorn LR. Implementing the WHO Safe Childbirth Checklist: lessons learnt on a quality improvement initiative to improve mother and newborn care at Gobabis District Hospital, Namibia. BMJ Open Qual. 2017;6(2):e000145.
6. Nababan HY, Islam R, Mostari S, Tariqujjaman M, Sarker M, Islam MT, et al. Improving quality of care for maternal and newborn health: A pre-post evaluation of the Safe Childbirth Checklist at a hospital in Bangladesh. BMC Preg Childb. 2017;17(1):1-10.
7. Perry WR, Nejad SB, Tuomisto K, Kara N, Roos N, Dilip TR, et al. Implementing the WHO safe childbirth checklist: lessons from a global collaboration. BMJ Glob Heal. 2017;2(3):1-7.
8. Maisonneuve JJ, Semrau KE, Maji P, Pratap Singh V, Miller KA, Solsky I, et al. Effectiveness of a WHO safe childbirth checklist coaching-based intervention on the availability of essential birth supplies in Uttar Pradesh, India. Int J Qual Heal Care. 2018;30(10):769-77.
9. Semrau KE, Hirschhorn LR, Marx Delaney M, Singh VP, Saurastri R, Sharma N, et al. Outcomes of a coaching-based WHO safe childbirth checklist program in India. N Engl J Med. 2017;377(24):2313-24.
10. Molina RL, Benski A-C, Bobanski L, Tuller DE, Semrau KEA. Adaptation and implementation of the WHO safe childbirth checklist around the world. Implement Sci Commun. 2021;2(1):1-10.
11. Mathai M, Oyieyo DM. Implementing the WHO Safe Childbirth Checklist: Lessons from a global collaboration. BMJ Glob Heal. 2017;2(3):1-7.
12. Odundo DA, Murila F, Wamalwa D. Efficacy of a discharge checklist for neonates in reducing neonatal morbidity and mortality. Afr J Online. 2021;98(1):579-584.
13. Semrau KE, Miller KA, Lipsitz S, Fisher-Bowman J, Karlage A, Neville BA, et al. Does adherence to evidence-based practices during childbirth prevent perinatal mortality? A post-hoc analysis of 3,274 births in Uttar Pradesh, India. BMJ Glob Heal. 2020;5(9):e002268.
14. Singh V, Saurastri R, Sharma N, Semrau K, Hirschhorn LR, Megan MD. Outcomes of a

coaching-based WHO safe childbirth checklist program in India. N Engl J Med. 2017;377(24):2313-24.
15. Roberts JP, Fisher TR, Trowbridge MJ, Bent C. A design thinking framework for healthcare management and innovation. Heal. 2016;4(1):11-4.
16. Semrau KE, Hirschhorn LR, Marx Delaney M, Singh VP, Saurastri R, Sharma N, et al. Outcomes of a coaching-based WHO safe childbirth checklist program in India. N Engl J Med. 2017;377(24):2313-24.
17. Dearing JW, Cox JG. Diffusion of innovations theory, principles, and practice. Health Aff. 2018;37(2):183-190.
18. Keith RE, Crosson JC, O'Malley AS, Cromp DA, Taylor EF. Using the Consolidated Framework for Implementation Research (CFIR) to produce actionable findings: A rapid-cycle evaluation approach to improving implementation. Implement Sci. 2017;12(1):1-12.

Cite this article as: Lihanda P, Muitta E, Muhonja F. Healthcare providers factors influencing the uptake of WHO modified safe child birth checklist in management of pre-term births among healthcare workers in Migori County, Kenya. Int J Community Med Public Health 2024;11:671-7.