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Prevalence and factors associated with post-abortion contraceptive uptake at Mbagala Hospital, Temeke, Dar Es Salaam, Tanzania

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Abstract

Background The uptake of modern contraceptives post-abortion care bridges the gap of unmet need for modern contraceptives which can reduce the rate of unintended pregnancies and recurrent abortion, thus improving women's health. Studies have demonstrated variations in the uptake of modern contraceptives, even within the same country.

Objective To assess the factors associated with the uptake of modern contraceptive methods among women who received care at a comprehensive post-abortion care (cPAC) unit at Mbagala Hospital in Temeke, Dar es Salaam.

Methodology A cross-sectional analytical study involving 234 post-abortion women was conducted at Mbagala Hospital in Temeke, Dar es Salaam, from October 2020 to March 2021. The convenient sampling technique was employed to collect data using a pretested structured questionnaire. Subsequently, the data was cleaned and analyzed using SPSS Version 23. A Chi-square test with a significance level set at P -value < 0.2 was used to test associations, and multivariable analysis was employed to identify independent factors associated with the uptake of modern contraceptives, with a P -value of less than 0.05 being significant.

Results The uptake of modern contraceptives post-abortion was 67% among 234 post-abortion women, with the most commonly used method being injectable (35.9%). Higher uptake of modern contraceptives was observed in those aged 15 to 19 years with an Adjusted Odds Ratio (AOR) of 5.97 (95% CI 1.24–28.58), and in those aged 20 to 24 years, with an AOR of 3.55 (95% CI 1.54–8.18). Self-employed individuals also showed higher uptake with an AOR of 2.59 (95% CI 1.13–5.91). On the other hand, nulliparous and primiparous women were less likely to use modern contraceptives, with AORs of 0.12 (95% CI 0.02–0.60) and 0.22 (95% CI 0.16–1.70), respectively.

Conclusion and recommendation All the women who attended the clinic for post-abortion care received counseling on contraceptive methods, and two-thirds of the women (67%) received modern contraceptives as part of post-abortion care. However, there was a missed opportunity to prevent unwanted pregnancies in 33% of the women who received care. Greater efforts should be made to reach out to women (aged 25 years or older), self-employed, and women with four or more children in order to increase the uptake rate.

Keywords Abortion, Comprehensive post-abortion care (cPAC), Contraceptive, Uptake, Counseling

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Introduction

Post-abortion contraceptive use is one of the key components of comprehensive post-abortion care. Studies have shown it takes 8 to 10 days for fertility to return after abortion [1, 2]. Once a woman has had an abortion and receives care at the Comprehensive Post-Abortion unit, she should leave with a contraception method of her choice or be referred to a service provider where this service can be provided [3]. This approach will reduce the number of unplanned pregnancies and, in the long run, contribute to reducing maternal mortality, as unsafe abortion accounts for 10% of maternal mortality cases in Sub-Saharan Africa (SSA), including Tanzania.

Worldwide, unsafe abortion remains a significant challenge, accounting for approximately 45.1% of all abortions [4]. Despite strict laws in our country regarding pregnancy termination, unsafe abortion is still common and contributes to maternal morbidity and mortality. The exact extent of unsafe abortion in our setting is not known [5]. However, the Hai study conducted by Mswia and colleagues estimated that one-third of maternal deaths are attributed to unsafe abortion [6]. A study conducted in Tanzania concerning unsafe abortion revealed that 16% of maternal mortality is linked to complications arising from unsafe abortion [7]. Many of these deaths are preventable through the use of modern contraceptive methods to prevent unwanted pregnancies. Sometimes, it is challenging to differentiate between induced abortion and spontaneous abortion in our setting due to over-the-counter misoprostol usage, and patients may be reluctant to disclose that they had an abortion because of strict laws and the fear of social stigmatization [8]. In Tanzania, the incidence of induced abortion was reported to be 36 per 1,000 women of reproductive age [9].

Modern contraceptive methods include oral contraceptives (pills), injectables, subdermal implants, patches, vaginal rings, intrauterine devices and systems, condoms, diaphragms, and cervical caps. Modern contraceptive methods offer an opportunity to prevent unwanted pregnancies, thus reducing the number of unsafe abortions and indirectly decreasing maternal mortality caused by complications related to unsafe abortion [7]. According to the Tanzania National Demographic Health Survey (TDHS) of 2015/2016, the unmet need for family planning is estimated to be 29%, a trend that has not changed since the 2010 survey [15]. Post Abortion Care offers an opportunity to bridge the gap in the unmet need for modern contraceptive usage. Counseling on Family planning and offering these services are integral elements of the post-abortion care [10]. Maternal, newborn, and child healthcare (MCH) is one of the key components of the National Package of Essential Reproductive and Child Health Interventions (NPERCHI), with a focus on improving the quality of life for women, adolescents, and

children. Among the elements of this component are the Post-Abortion Care and Family Planning [11].

Despite the availability of various modern contraceptive methods, unintended pregnancy remains a global problem, affecting 44% of pregnancies. Among them, 59% of these pregnancies in developed countries and 55% in developing countries result in abortion [12]. A study conducted in Temeke Hospital to assess the acceptance of contraceptives among women who had an unsafe abortion in Dar-es-salaam reported a high acceptance rate for family planning post-abortion, with proper counseling reaching 90% ([13]. This study was conducted prior to the expansion of post-abortion care services to the lower-level health facilities in Dar-es-salaam [14]. The present study will provide recent data on the uptake of family planning at Temeke and will aid in strategic planning and improving the care provided to women post-abortion.

Materials and methods

Study design and participants

A hospital-based cross-sectional analytical study was conducted at Mbagala Hospital after receiving ethical approval from the Muhimbili University of Health and Allied Sciences (MUHAS) Institutional Review Board and facility approval from the facility supervisors. Written informed consent was obtained from all participants before enrolment. A total of 234 women who had received post-abortion care at the comprehensive post-abortion care (cPAC) unit from October 2020 to March 2021 were enrolled in the study using convenience sampling. The research assistant reviewed the cases attended to at the unit from the register book and asked the clients for their availability for an exit interview once they were discharged from the hospital. Those who agreed signed a consent form before the interview. Patients who needed referral at a higher tertiary hospital for more specialized care such as hysterectomy, and blood transfusion for rare blood groups, were excluded from the study.

Sample size

A total of 234 women (the calculated minimum sample size for this study including 10% attrition rate was 205) who had received post-abortion care at the comprehensive post-abortion care (cPAC) unit were enrolled.

Data collection methods

Data were collected through an interviewer-administered structured exit interview using a pretested structured questionnaire, which was developed by the authors. The questionnaire prepared in English was translated into Swahili language (local language). The translation process involved forward and backward translation by experts and was pilot-tested to ensure clarity, accuracy, and improving the validity of our results.

The questionnaire included both closed and open-ended questions, which were administered to women who had received care at the post-abortion unit at Mbagala Hospital. The open-ended question in the questionnaire assessed knowledge of family planning methods by asking the interviewee to name all family planning methods they knew. The participants who mentioned three or more family planning methods were categorized as having adequate knowledge, while those who mentioned fewer than three methods were categorized as having inadequate knowledge. This method of assessing knowledge was adopted from the Tanzania Demographic Health Survey (TDHS) 2015/16 [15]. As part of the standard operating procedures in the post-abortion clinic, all of these women were counseled by the health facility nurse (a trained healthcare provider) on contraception and made aware of the available contraceptive methods. The exit interviews were conducted to the consented patients after their discharge from the hospital.

The information collected encompassed socio-demographic details, reproductive history, information on contraceptive methods, whether they received counseling about contraceptives, and the availability of their method of choice. Two trained healthcare nurses collected data. Two days of intensive training were provided to data collectors on the objective of the study, the data collection process, and the relevance of the study before actual data collection. The principal investigator was actively involved in the supervision of data collection, and the completed questionnaire was cross-checked on-site daily for completeness. Regular communication was held between the data collectors, supervisors, and the principal investigator.

Description of variables

The dependent variable was the uptake of modern contraceptives post-abortion care. Independent variables included social-demographic factors such as age, marital status, occupation of the participant, partner occupation, education levels of both the women and their partners, parity, history of previous abortion, and knowledge of family planning.

Data analysis

The quantitative data were entered into the KOBO online software and then transferred to the Statistical Package for Social Science (SPSS) version 23, where they were cleaned and analyzed. Descriptive statistics were used to summarize the data, including frequency tables and proportions for the categorical variables and medians with respective measures of dispersion for numerical variables. A Chi-square test with a *P* value of less than 0.05 was used to establish whether differences were observed. Bivariate and multivariable logistic regression were used

Table 1 Social demographic and reproductive health characteristics of participants *N* = 234

Variables	Frequency (N = 234)	Percentage
Age		
15–19	16	6.84
20–24	78	33.33
25–34	109	46.58
35 and above	31	13.25
Occupation		
Housewife	96	41.03
Employed	43	18.38
Self-employed	95	40.6
Marital status		
Cohabiting	29	12.39
Married	162	69.23
Single	43	18.38
Number of deliveries		
None	80	34.16
Prime	68	29.06
2–3	64	27.35
4 and above	22	9.4
Education level		
Never been to school*	9	3.85
Primary education	115	49.15
Secondary education	92	39.32
Tertiary education	18	7.69
Partner Education level		
Never been to school*	23	9.8
Primary education	74	31.6
Secondary education	107	45.7
Tertiary education	30	12.8
Previous abortion		
No	169	72.2
Yes	65	27.8
Knowledge of family planning		
Inadequate	46	19.7
Adequate	188	80.3
Counseled on modern contraceptive method		
No	2	0.9
Yes	232	99.1

to measure the association between the uptake of modern contraceptives and various exposure variables, with a *P*-value less than 0.05 considered statistically significant.

Results

Background characteristics of the participant

A total of 310 women attended, among them 234 women participated. A total of fifty women left before the interview, and 26 women did not consent to participate in this study. The mean age was 27.1 years (SD = 6.4) with a range of (17–47) years. Of the 234 women, 81.7% were

married or cohabiting, 47% had secondary education or higher, 41% were housewives, and 37% had two or more children (Table 1).

The proportion of women who uptake modern contraceptives

In this study, the uptake of modern contraceptive post-abortion care was 67.2% (Fig. 1), and of 234 women, 99.2% reported that they received counselling on modern contraceptives before discharge.

Methods of contraceptives chosen by women post-abortion

The most commonly selected methods were injectables, chosen by 56 (35.9%) participants, followed by implants, chosen by 48 (30.8%), and pills, selected by 30 (19.2%). Intrauterine devices were the least commonly chosen method, selected by only 3 (1.9%) (Fig. 2).

Association between social demographic factors with the uptake of modern contraceptives after abortion $N=234$

The test of association between the uptake of modern contraceptives and sociodemographic characteristics, using the Chi-square test with a significance level of less than 0.2, demonstrated the association between various factors (such as age, women's occupation, previous history of abortion) and uptake of contraception (Table 2).

In bivariate analysis, age, occupation, and adequate knowledge of contraception were associated with the uptake of modern contraceptive methods after abortion care. Women aged 20–24 years had 96% higher odds of uptake of modern contraceptives than those aged 25–34 years and those who were self-employed had 2.4 higher

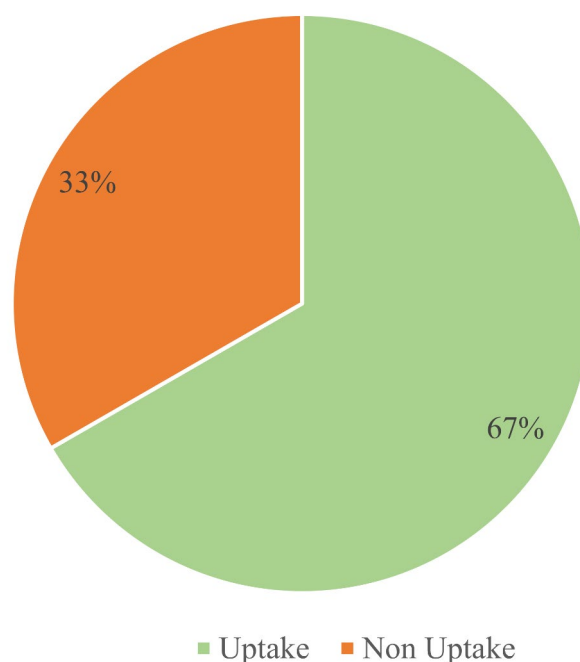


Fig. 1 The percentage of women who uptake modern contraceptive post abortions care

odds of uptake of modern contraceptives than employed women. A history of previous abortion was associated with 59% higher odds of uptake of modern contraceptives post-abortion care. Having adequate knowledge of contraceptives increased the odds of uptake of these methods by 93% (Table 3).

In adjusted analysis, age, occupation, and the number of children remained significantly associated with the

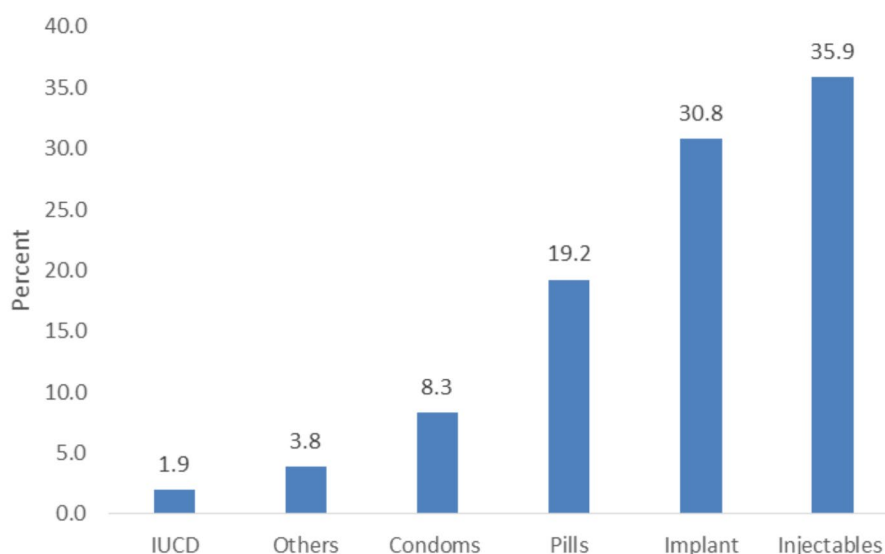


Fig. 2 Common methods of modern contraceptives selected by women post-abortion care

Table 2 Factors associated with uptake of modern contraceptives after post-abortion care using the Chi-square test

	Non-uptake (N=78)	Uptake (N=156)	Total	P-Value
	Frequen- cy (%)	Frequency n (%)		
Age group				
15–19	4(25.00)	12(75.00)	16	0.17
20–24	20(25.64)	58(74.36)	78	
25–34	44(40.37)	65(59.63)	109	
35 and above	10(32.26)	21(67.74)	31	
Occupation				
Housewife	33(34.38)	63(65.63)	96	0.064
Employed	20(46.51)	23(53.49)	43	
Self-employed	25(26.32)	70(73.68)	95	
Marital status				
Cohabiting	7(24.14)	22(75.86)	29	0.505
Married	57(35.19)	105(64.81)	162	
Single	14(32.56)	29(67.44)	43	
Number of deliveries				
None	28(35.00)	52(65.00)	80	0.462
Prime	23(33.82)	45(66.18)	68	
2 to 3	23(35.94)	41(64.06)	64	
4 and above	4(18.18)	18(81.82)	22	
Education level				
Never been to school*	1(11.11)	8(88.89)	9	0.46
Primary education	37(32.17)	78(67.83)	115	
Secondary education	33(35.87)	59(64.13)	92	
Tertiary education	7(38.89)	11(61.11)	18	
Partner Level of education				
Never been to school*	4(17.39)	19(82.61)	23	0.253
Primary education	24(32.43)	50(67.57)	74	
Secondary education	37(34.58)	70(65.42)	107	
Tertiary education	13(43.33)	17(56.67)	30	
Previous abortion				
No	61(36.09)	108(63.91)	169	0.149
Yes	17(26.15)	48(73.85)	65	
Knowledge on method				
Inadequate knowledge	21(45.65)	25(54.35)	46	0.048
Adequate knowledge	57(3.32)	131(69.68)	188	

uptake of modern contraceptives among women who received PAC. Women aged 20–24 years and 15–19 years had 4–6 times significantly higher odds of accepting the methods than those aged 25–34 years (AOR 5.97;95%CI:1.24–28.55) and (AOR 3.55;95%CI: 1.54–8.18). Self-employed women had twice the odds of taking the methods than employed women. However, women who did not have children or were primiparous had 88% and 78% lower odds of taking the modern contraceptive methods compared to those with four or more children, respectively. Marital status, education level, partner's education, and occupation were analyzed but were not

associated with the uptake of modern contraceptive methods.

Discussion

The study assessed factors associated with the uptake of modern contraception after post-abortion care at Mbagala Hospital, Temeke District in Dar es Salaam. The uptake rate of modern contraceptive methods after abortion care was found to be 67%. The most common method selected by women was injectables, followed by implants. Younger age (14–21), self-employment, and parity remained significant factors associated with uptake of modern contraceptive methods post-abortion in Mbagala Hospital.

In this study, 67% of women adopted a contraceptive method after counseling, by a female nurse. This proportion is lower than the results recorded in other regions, such as northwest Tanzania at 86% [16], Kenya at 76% [17], and Brazil at 97.4% [18]. However, results from our study are slightly higher than the study in Ethiopia whose proportions is at 61.5% [19]. These variations indicate differences in uptake rates across different geographic areas and may depend on the timing of the research, as seen in two previous studies that were conducted in Tanzania, which yielded different results. Study design, geographical location, and social and cultural differences can be contributing factors. The 33% of women who were not ready to take modern contraceptives after abortion represent a missed opportunity to help prevent recurrent abortion. The World Health Organization (WHO) recommends a woman should wait for at least six months before conceiving again after an abortion [20]. This allows women to fully recover and reduce the risk of recurrent abortion.

Furthermore, another study conducted in Northwestern Tanzania showed that the sex and occupation, of the counselor may influence the uptake of contraception [21]. Tanzania is a religious country, where almost 93% of the population reported religious faith as “very important to them” [21]. Our study failed to assess the impact of religion on the uptake of contraception.

Several sociodemographic characteristics have been shown to significantly affect the uptake of modern contraceptives post-abortion, including age, occupation status, and the number of deliveries. The age group of 15–19 years has 5.97 times higher odds of using modern contraceptive methods than the age group of 25 to 34. This finding differs from other studies [22], which report that those below 19 years have lower odds of using modern contraceptives post-abortion. This difference could be attributed to the slight improvement in adolescent reproductive health services in our facilities, changes in social-cultural norms in the Coast region regarding discussions of sexuality, and the possibility of low numbers

Table 3 Factors associated with the uptake of modern contraceptive post-abortion care (Bivariate and Multivariate analysis)

Variables	Bivariate		Multivariable	
Categories	COR (95% CI)	P-Value	AOR (95% CI)	P-value
Age group				
25–34	1	1	1	1
15–19	2.02(0.62–6.71)	0.245	5.97(1.24–28.58)	0.025
20–24	1.96(1.03–3.71)	0.038	3.55(1.54–8.18)	0.003
35 and above	1.42(0.61–3.31)	0.414	0.64(0.22–1.87)	0.424
Occupation				
Employed	1	1	1	1
Housewife	1.66(0.79–3.45)	0.175	1.24(0.54–2.84)	0.608
Self-employed	2.43(1.14–5.17)	0.021	2.59(1.13–5.91)	0.024
Number of deliveries				
4 and above	1	1	1	1
None	0.41(0.12–1.33)	0.14	0.12(0.02–0.60)	0.01
Prime	0.43(0.13–1.43)	0.172	0.22(0.05–0.99)	0.049
2 to 3	0.39(0.11–1.31)	0.13	0.27(0.06–1.08)	0.065
Previous abortion				
No	1	1	1	1
Yes	1.59(0.84–3.01)	0.15	1.91(0.95–4.001)	0.071
Knowledge of contraceptive methods				
Inadequate	1	1	1	1
Adequate	1.93(1.00–3.73)	0.05	1.95(0.95–4.01)	0.069

of respondents in that age group affecting the findings. However, this finding was supported by a study from Ethiopia, which showed that women aged 19 or younger were 1.43 times more likely to uptake modern contraceptives post-abortion [23]. The age group of 20 to 24 years is 3.55 more likely to use modern contraceptives, and this finding is supported by several studies [22, 24].

Women's occupations significantly affect the uptake of modern contraceptives post-abortion. The study found that self-employed women are 2.59 times more likely to uptake modern contraceptives compared to those who are employed. This finding differs from other studies [19, 25–27], which found an association between the uptake of modern contraceptives and women's occupation but the association was not significant. This difference could be attributed to social-cultural differences, variations in study settings, or even differences in sample size. Additionally, women with no previous history of delivery have 88% lower odds of uptake of modern contraceptives compared to those with four children or more, and primiparous women have 78% lower odds of uptake compared to those with four children. Two other studies from Ethiopia support this finding [19, 28].

Knowledge of contraceptive methods appears to be an associated factor with the uptake of modern contraceptives post-abortion. In an unadjusted analysis, those with prior knowledge had 93% higher odds of uptake of modern contraceptives compared to those with inadequate knowledge. However, this factor was not significant after controlling for confounders. A study from Ethiopia

showed that knowledge of contraceptives has a positive effect on the uptake of modern contraceptives [29].

Most of the women who uptake modern contraceptive methods post-abortion prefer injectables, accounting for 35.8% of users, followed by implants at 30.7%, pills at 19.2%, condoms at 8.3%, and intrauterine devices at 3.8%. This preference for injectables has also been reported in other studies. Women often choose injectables because they are less likely to lead to disagreements with their partners who may not like their wives using any form of modern contraception. Additionally, injectables are easy to obtain and use, requiring fewer skills, and they are available at women's convenience. There are variations in preference for contraceptive methods in different localities due to factors such as the availability of specific contraceptive methods in various countries, as reported in a comparative analysis of different countries [30].

Study limitation

The data were collected by healthcare professionals, including nurses and doctors. This could have introduced bias as patients may respond positively to please the interviewer out of respect. To minimize this potential bias, the patients were informed that providing honest responses would help improve the quality of services, and confidentiality was assured. The present study was conducted in one center; thus, these results need to be interpreted cautiously and may lack generalizability to the whole population of Tanzania. The present study did not look at partner influence on the choice of

contraceptives, which is an important factor to consider. Another limitation of our study was that we adopted the method of measuring knowledge of contraceptive use from the TDHS survey, which relied on a single question, instead of using a standardized tool that includes a set of questions.

Study strength

Data were directly obtained from the clients, and the phone numbers of the respondents were available for verifying the correctness of the responses by calling some of them randomly. The exit interviews were conducted within 12 to 48 h post-abortion care, minimizing recall bias.

Conclusion

The prevalence of uptake of modern contraceptives post-abortion is high at 67%. However, there is a missed opportunity to prevent unwanted pregnancies in 33% of the women who received care at the post-abortion care unit at Mbagala Hospital. It is advised that all women should be counseled and offered the contraceptive method of their choice [3]. Women aged over 25 years, those who are employed, those with high parity (4 or more), and those with inadequate knowledge of contraceptives had lower odds of taking modern contraceptives than others.

Recommendation

The contraceptive uptake was generally high, but more efforts are needed for individuals aged over 25 years, since they are less likely to use modern contraceptives. Further research is needed in this area to understand the reasons behind this trend. Additionally, more health education is required to increase the uptake rate among post-abortion women.

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Author contributions

SZT contributed to the conception and design of the study, analyzed, and interpreted the data, and drafted and revised the manuscript. CK, SM, and DM contributed to the design, and data interpretation and critically revised the manuscript. All authors approved the final manuscript for submission.

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None.

Data availability

The data supporting these findings are not publicly available but can be obtained upon a formal request to the corresponding author and with permission from Muhimbili University of Health and Allied Sciences.

Declarations

Ethics approval and consent to participate

This study was approved by the institutional review board (IRB) at Muhimbili University of Health and Allied Science (MUHAS) Ref. No. DA.282/298/ 01. Permission to conduct research was obtained from RMO, DMO and MOI of the facility. All participants were informed about the study purpose, risks, and benefits, and provided written informed consent before enrolment into the study. Participants who never attended school, or had challenges in writing or reading or were minors provided informed consent either through a thumbprint, or had the informed consent read to them in presence of a legally authorized representative (LAR) or parent, respectively. All methods of data collection were performed in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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