Knowledge, Attitudes, and Practices Related to Female Genital Mutilation or Cutting among Primary Care Pediatricians: A Cross-Sectional Survey in Zürich, Switzerland

Laureline Brunner, MD[1,2,*], Jasmine Abdulcadir, MD, PD, FECSM[3]

[1] *Faculty of Medicine, University of Bern, Bern, Switzerland*
[2] *Department of Health, Cantonal Medical Service, Office for Health, Zürich, Switzerland*
[3] *Department of Pediatrics, Obstetrics and Gynecology, Geneva University Hospitals, Geneva, Switzerland*

ABSTRACT

Study Objective: Female genital mutilation/cutting (FGM/C) is increasingly encountered in European healthcare settings due to migration, yet little is known about pediatricians' preparedness to address it. This study assessed the knowledge, attitudes, and practices (KAP) of primary care pediatricians in the canton of Zürich regarding FGM/C.
Methods: We conducted an exploratory cross-sectional, structured, self-administered KAP survey among office-based primary care pediatricians in the canton of Zürich. All pediatricians with a Swiss specialization title in pediatrics practicing in an office-based primary care setting in the canton were eligible to participate. The survey assessed prior exposure to FGM/C, knowledge, attitudes, and clinical practices. Descriptive analyses were performed, and knowledge scores were calculated.
Results: Eighty-nine pediatricians were included in the analysis. Nearly all had heard of FGM/C, but only 20.2% had identified a patient with FGM/C. The mean knowledge score was 71.2% (percentage of correct responses across scored knowledge). Knowledge of complications and vulvar anatomy was high, while familiarity with FGM/C classification, treatment options, and reporting procedures was limited. Most participants rejected all forms of FGM/C and considered addressing it part of their professional responsibility. However, routine screening was uncommon; 66.3% rarely or never asked about FGM/C during history taking, and 35.4% did not screen at all. Reported barriers included limited interpreter access and moderate confidence.
Conclusion: Although pediatricians demonstrated supportive attitudes and general awareness, gaps remained in practical knowledge and routine implementation. Targeted training, clear clinical guidance, and accessible referral resources may strengthen early identification and care in primary pediatric practice.
Key Words: Circumcision, Female, Genital mutilation, Pediatricians, Primary healthcare, Knowledge, Attitudes, Cross-sectional studies, Switzerland

Introduction

Globally, more than 230 million girls and women have undergone female genital mutilation/cutting (FGM/C).[1] With increasing migration from FGM/C-practicing countries, the issue has gained relevance in Europe. In Switzerland, indirect estimates suggest that around 24,600 women and girls are living with FGM/C or are at risk.[2] According to the Swiss Federal Police Office, the largest populations potentially affected reside in the cantons of Bern and Zürich.[3] Using indirect estimation methods described by Cottler-Casanova et al,[4] we estimated that in 2024 approximately 4600 women with FGM/C or at risk were living in the canton of Zürich (Additional File 1). In the same year, more than 16,000 residents from FGM/C-practicing countries, primarily Eritrea, Somalia and Iraq, lived in the canton, predominantly in urban areas (Additional File 2).

Growing awareness of FGM/C in Switzerland led to the establishment of the Network against Female Genital Cutting Switzerland in 2016.[3] With its support, the health authorities of the canton of Zürich launched the regional contact point FGMhelp in February 2024. FGMhelp provides coordination, prevention, awareness-raising, and counseling services for both individuals with FGM/C or at risk and professionals.[5]

Healthcare professionals such as gynecologists, midwives, and pediatricians play an important role in the information, prevention, and management of FGM/C due to their direct contact with women, girls, and families.[3] However, evidence on their clinical experiences in Switzerland remains limited. Surveys conducted by UNICEF Switzerland suggested that these professionals were often insufficiently prepared to address FGM/C in a structured and confident manner, with reported uncertainty in clinical management and a continued need for training and practical guidance.[6-8] Preliminary analyses from a more recent Swiss hospital-based pediatric sample using the same questionnaire as the one adapted for this study suggest that these challenges persist in the pediatric hospital setting, including limited familiarity with legal frameworks and reporting regulations (Bazzoun et al, submitted).

In this context, understanding the perspective of office-based primary care pediatricians is also important. As

* *Address correspondence to*: Laureline Brunner, MD, Department of Health, Cantonal Medical Service, Office for Health, Stampfenbachstrasse 30, 8090 Zürich, Switzerland; Phone +41432595231
E-mail address: laurelinebrunner@gmail.com (Laureline Brunner).

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first points of contact for children, adolescents, and their families, they are well positioned to recognize risk, provide support and information, and engage in prevention and care. Through early identification and counseling, they may influence the lives of girls living with FGM/C or at risk.[9] Assessing what pediatricians know about FGM/C, how they perceive it, and how they act in clinical situations is therefore essential and can help inform the prevention, awareness-raising, counseling, and referral activities of FGMhelp. Accordingly, this study assessed the knowledge, attitudes, and practices (KAP) of office-based primary care pediatricians in the canton of Zürich regarding FGM/C.

Methods

Design

We conducted an exploratory cross-sectional study using a structured survey to assess the KAP of office-based primary care pediatricians working in the canton of Zürich regarding FGM/C. KAP surveys aim to elicit what is known, believed, and done regarding a topic and are often used to inform awareness or intervention programs.[10] In this study, results were intended to identify gaps that might be addressed by the regional contact point FGMhelp.

Study Participants and Recruitment

Participants were office-based primary care pediatricians in the canton of Zürich with a Swiss specialization title in pediatrics. Pediatricians working part-time in office-based practice and part-time in hospital settings were also eligible. Because the study aimed to include all eligible pediatricians in the canton, no formal sample size calculation was performed. Using national registries[11,12] and online research, we identified 317 eligible pediatricians, all of whom were invited to participate via email. Study flyers were also distributed at pediatric events during the data collection period. Participation was voluntary, with written consent obtained. Participants who completed the survey were offered a 1-hour FGM/C training session, for which they could collect one continuous medical education credit.

Data Collection

The survey was administered online via SurveyMonkey from May to August 2025, with reminders sent in May, June, and July. To reduce response bias, participation was anonymous, and the questionnaire was self-administered. The questionnaire was adapted from a KAP survey on FGM/C conducted by the University Hospital of Geneva among healthcare professionals working at the five Swiss university hospitals.[13] Items not relevant to office-based pediatric practice were removed, and items relevant to primary pediatric practice in Zürich were added. References to "women" in the original items were replaced with "girls or adolescents" when appropriate. Following adaptation, the survey was translated into German and back-translated into English. Wording adjustments were made to the German version to ensure semantic equivalence with the original English items. The revised questionnaire was reviewed by four experts in FGM/C to improve clarity and relevance. Based on their feedback, several items were reorganized, added, or removed. The survey was subsequently pilot tested with three pediatricians to assess clarity and comprehensibility. Following pilot testing, minor wording changes were made, and a small number of items were removed. The final questionnaire included 21 demographic and prior FGM/C exposure items, 27 knowledge items, 15 attitudes items, and 22 practice items. Some items were implemented as gateway questions to account for the likelihood that pediatricians might have limited experience with FGM/C. These ensured that follow-up questions were displayed only to respondents with relevant experience, reducing response burden. The full questionnaire is available in Additional File 3.

Data Analysis

Data were analyzed using Stata version 17.0 (StataCorp, College Station, TX). Items were first analyzed descriptively using all available valid responses. Categorical variables are presented as numbers and percentages, continuous variables as medians with interquartile ranges. To summarize overall knowledge, a composite knowledge score was calculated. Two gateway questions used solely to determine skip patterns were excluded from scoring. The remaining knowledge items were coded as correct (1) or incorrect (0), with responses of "I don't know" coded as incorrect. Responses not applicable due to skip logic were treated as structurally missing and excluded from the denominator. Participants who failed to complete all applicable knowledge items were excluded from score calculation. For the remaining participants, the knowledge score was defined as the percentage of correct responses among all applicable knowledge items and is reported using the mean, standard deviation, and observed range. Because previous analyses of the original questionnaire did not support the use of the knowledge items as a unified psychometric scale, internal consistency measures such as Cronbach's alpha were not calculated, and multivariable modelling was not performed. Knowledge scores were compared across predefined groups based on conceptual relevance (prior FGM/C training vs none, prior FGM/C identification vs none, urban vs nonurban practice, guideline exposure vs none, and practices with $\leq$20% vs >20% patients with a migration background) using independent two-sample t-tests. All tests were two-sided, and P values <.05 were considered statistically significant.

Results

A total of 97 pediatricians provided electronic consent to participate. Eight participants did not complete any survey items or stopped after the demographic section and were therefore excluded from the analysis. Among the remaining 89 participants, six discontinued the survey during the knowledge section, one discontinued after question 12 of the practices section, and one did not complete the attitudes section but answered the other parts of the questionnaire. Participants with partial responses were retained,

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and descriptive statistics were calculated using all available data. Consequently, the number of respondents (N) varies across items.

Demographics and Prior Exposure to FGM/C

Among the 89 participants, 70.8% were women ($n = 63$). Most worked in group practices ($n = 76$, 85.4%) and in urban settings ($n = 54$, 60.7%). The mean age was 50 years, and the mean duration of professional experience in pediatrics was 16 years. Seventy-four percent of participants ($n = 66$) reported that 21% to 60% of their patient population had a migration background. Nearly all participants had heard of FGM/C ($n = 86$, 96.6%), and 20.2% ($n = 18$) had identified at least one patient with FGM/C, most of whom worked in urban or suburban practices ($n = 17$, 94.4%). Most participants did not know ($n = 41$, 46.1%) or were unsure ($n = 22$, 24.7%) whether written FGM/C guidelines were available in their work setting, and 74.2% ($n = 66$) had received no prior training on FGM/C. Two-thirds ($n = 59$, 67.0%) were not familiar with the local contact point FGMhelp, while 61.8% ($n = 55$) expressed interest in learning more about FGM/C. Demographic characteristics and prior exposure are presented in Tables 1 and 2.

Knowledge

As shown in Table 3, most participants correctly identified the definition of FGM/C, its potential complications, and vulvar anatomy. Most were aware that FGM/C is illegal in Switzerland ($n = 82$, 98.8%) but fewer knew that transporting a person abroad to perform FGM/C is also illegal ($n = 69$, 83.1%). Knowledge of treatment options, FGM/C classification, and the main FGM/C-practicing communities in the canton of Zürich was more limited. About one third of participants correctly identified all four WHO FGM/C types, and fewer than half reported familiarity with local reporting regulations.

Of 89 respondents, 83 (93%) completed all applicable (nonskip logic) knowledge items and were included in the knowledge score analysis. The mean knowledge score was 71.2% (SD 13.9; range 20.8-92.0). Knowledge scores tended to be higher among participants with prior FGM/C training, previous clinical identification of a patient with FGM/C, suburban practice, and prior guideline exposure. Scores were similar between those working in city vs noncity settings and between practices with $\leq$20% vs >20% patients with a migration background. None of the differences reached statistical significance (all $P > .05$; Additional File 4).

Attitudes

Seventy-five percent strongly disagreed or disagreed that FGM/C-practicing communities are honoring an important cultural tradition, while 72% strongly agreed or agreed that FGM/C is oppressive toward women (Table 4). Most participants strongly agreed or agreed that cutting the genitals of any child is wrong, and 87.8% rejected pricking of the clitoral hood as an acceptable alternative. The majority perceived women and girls with FGM/C as victims, and 74.1% supported some form of punishment for parents who subject their daughters to FGM/C. Regarding clinical care, 87.7% strongly disagreed or disagreed that addressing FGM/C was outside their professional responsibility. Most supported proactively discussing FGM/C during consultations, and favored including fathers or male partners in counseling. Responses were more heterogeneous regarding whether patients or parents might feel offended if the topic was raised. Some uncertainty also remained regarding the religious framing of FGM/C and assumptions about sexual pleasure among women and girls with FGM/C.

Practices

As shown in Table 5, two-thirds of pediatricians reported never or rarely asking about FGM/C during medical history taking. Overall, 35.4% ($n = 29$) did not screen for FGM/C at all, while 17.1% ($n = 14$) screened all patients. In addition, 65.1% ($n = 54$) reported never having suspected FGM/C in a patient. Among those who had identified girls with FGM/C ($n = 16$ with valid responses), most reported always or frequently counseling patients and families about gynecological, mental, and sexual health, screening for complications, documenting FGM/C status, referring to specialized services, and informing families about the legal situation. When presented with a hypothetical case in which FGM/C was planned in the near future, most participants indicated they would speak with the child's parents (30.5%, $n = 25$) or seek advice from a specialized organization (51.2%, $n = 42$). Practical barriers included limited interpreter use due to availability, time, and cost constraints, and many participants expressed only moderate confidence in identifying and managing FGM/C.

Discussion

This study examined the KAP of office-based primary care pediatricians in the canton of Zürich regarding FGM/C. Overall, pediatricians demonstrated good awareness of the definition, health consequences, and illegality of FGM/C and expressed opposition to genital alteration in all children. Gaps were identified in more practical aspects of care, including familiarity with WHO classification, treatment options, reporting procedures, and especially routine screening and detection. Most participants considered addressing FGM/C part of their professional responsibility. At the same time, routine inquiry about FGM/C was uncommon, and relatively few participants reported having identified patients with FGM/C in practice.

Participants in our sample demonstrated good theoretical knowledge of FGM/C, but more practice-oriented knowledge, such as WHO classification, treatment options, and local reporting requirements, was limited. This pattern reflects a broader trend in the literature where healthcare professionals often recognize the harms and general legal context of FGM/C but lack the technical knowledge required for accurate classification, identification, management, and safeguarding.[14–17] These findings suggest that awareness

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Table 1
Participant Characteristics.

	Total (n = 89)
Age (y), median (IQR)	50 (42-56)
Working experience in pediatrics (y), median (IQR)	16 (10-22)
Gender (%)	
Female	63 (70.8)
Male	26 (29.2)
Religion (%)	
Refused to answer	1 (1.1)
None	31 (34.8)
Christian	56 (62.9)
Jewish	1 (1.1)
Practice location, selected* (%)	
Urban	54 (60.7)
Suburban	31 (34.8)
Rural	10 (11.2)
Type of practice, selected* (%)	
Solo practice	10 (11.2)
Group practice	76 (85.4)
Medical center	7 (7.9)
Other†	2 (2.3)
Upper age limit for pediatric FUP (%)	
16 y	18 (20.2)
18 y	40 (44.9)
20 y	10 (11.2)
>20 y	19 (21.3)
Other‡	2 (2.3)
Estimated proportion of patients with migration background in practice (%)	
0%-20%	10 (11.2)
21%-40%	37 (41.6)
41%-60%	29 (32.6)
61%-80%	12 (13.5)
81%-100%	1 (1.1)
	Total (n = 85)§
Subspeciality/CME, selected* (%)	
Pediatric emergency medicine	8 (9.4)
Pediatric and adolescent gynecology	7 (8.2)
Pediatric urology	2 (2.3)
Child abuse and child protection	9 (10.6)
Child and adolescent psychiatry	2 (2.3)
Psychosomatic and psychosocial medicine	10 (11.8)

CME, continuing medical education; FUP, follow-up; IQR, interquartile range.
* Multiple-response item: Percentages represent the proportion of eligible respondents selecting each option; percentages do not sum to 100%.
† "Other" responses included hospital activity; both respondents worked part-time in a primary care pediatric office and part-time in hospital.
‡ "Other" responses included 18 years of age or longer if physical/psychological disease and 16 years of age with possibility to extend follow-up depending on the clinical situation.
§ Four eligible participants missed the question relating to the subspecialty/CME, thus n = 85.

alone is insufficient and support a shift toward skills-based, practice-oriented education tailored to community-based pediatric care.

Our findings also point to a gap between awareness and clinical practice. Although pediatricians in our sample appeared willing to address FGM/C and were aware of its potential health consequences, routine screening remained uncommon and suspicion of FGM/C cases low. Taken together, these findings suggest an implementation and, possibly, a detection gap. Comparable patterns have been documented in other nonendemic settings, where healthcare professionals reported limited routine inquiry about FGM/C and few identified cases in practice.[14,18] This gap may reflect uncertainty about how to address a sensitive and potentially taboo topic, particularly in cross-cultural contexts. Language barriers, cultural differences, competing clinical priorities, and practical constraints such as limited access to interpreter services may discourage providers from initiating conversations.[19] This may, in turn, contribute to inequities in care provision, as patients with FGM/C may not receive appropriate screening, counseling, or support.[19,20]

Limited training and practical guidance likely further contribute to this discrepancy. In our study, most pediatricians had not received prior training on FGM/C, were unsure whether workplace guidelines existed, and were unfamiliar with the regional contact point FGMhelp, despite expressing interest in future learning. Similar patterns have been described in high-income settings, where healthcare providers reported a desire for training and confidence building but lacked structured education and standardized protocols.[14,16,18] As a consequence, providers often had to rely on informal learning, which may lead to negative experiences and reduced confidence.[18] Preliminary analyses from a recent Swiss hospital-based pediatric sample using the same questionnaire as the one adapted for this study suggested that similar gaps in clinical preparedness and management persist in the pediatric hospital setting (Bazzoun et al, submitted). These findings reinforce the need for

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Table 2
Prior Exposure to FGM/C.

	Total Sample *N*	Skipped* *n* (%)	Eligible *n*	Missing† *n* (%)	Valid Responses *n*
Have you ever heard of FGM/C?	89	0 (0)	89	0 (0)	89
Yes, *n* (%)					86 (96.6)
No, *n* (%)					3 (3.4)
Has FGM/C been practiced within your family or close contacts?	89	0 (0)	89	0 (0)	89
Yes, *n* (%)					1 (1.1)
No, *n* (%)					87 (97.8)
I don't know, *n* (%)					1 (1.1)
Does your work setting have any written guidelines that help professionals know how to care for women/girls with FGM/C?	89	0 (0)	89	0 (0)	89
Yes, *n* (%)					26 (29.2)
No, *n* (%)					41 (46.1)
I don't know, *n* (%)					22 (24.7)
Have you ever read guidelines for the care of women and girls with FGM/C?	89	0 (0)	89	0 (0)	89
Yes, *n* (%)					32 (36.0)
No, *n* (%)					41 (46.0)
Partly, *n* (%)					16 (18.0)
Have you ever identified a teenager or a girl with FGM/C in your clinical setting?	89	0 (0)	89	0 (0)	89
Yes, *n* (%)					18 (20.2)
No, *n* (%)					71 (79.8)
If yes, how many patients?	89	71 (79.8)	18	0 (0)	18
1 patient, *n* (%)					8 (44.4)
<5 patients, *n* (%)					8 (44.4)
5-20 patients, *n* (%)					1 (5.6)
>20 patients, *n* (%)					1 (5.6)
Did you receive previous trainings about FGM/C?	89	0 (0)	89	0 (0)	89
Yes, *n* (%)					23 (25.8)
No, *n* (%)					66 (74.2)
If yes, what kind of training did you follow?	89	66 (74.2)	23	0 (0)	23
Full class, *n* (%)					6 (26.1)
Brief mention in class, *n* (%)					6 (26.1)
Independent article reading, *n* (%)					3 (13.0)
Trained with a specialist, *n* (%)					1 (4.3)
Other, *n* (%)‡					7 (30.4)
Are you interested in learning more about FGM/C?	89	0 (0)	89	0 (0)	89
Yes, *n* (%)					55 (61.8)
No, *n* (%)					9 (10.1)
Partly, *n* (%)					25 (28.1)
Are you familiar with the Network against FGM/C Switzerland?	89	0 (0)	89	0 (0)	89
Yes, *n* (%)					40 (44.9)
No, *n* (%)					39 (43.8)
I am not sure, *n* (%)					10 (11.2)
Are you familiar with FGMhelp?	89	0 (0)	89	1 (1.1)	88
Yes, *n* (%)					18 (20.5)
No, *n* (%)					59 (67.0)
I am not sure, *n* (%)					11 (12.5)
If yes, how did you find out about FGMhelp?§	89	70 (78.6)	19	2 (10.5)	17
Website of FGMhelp, *n* (%)					5 (29.4)
At an event, *n* (%)					9 (52.9)
Social Media of FGMhelp, *n* (%)					3 (17.6)
Recommendation, *n* (%)					9 (52.9)
				1 (5.3)	18
Flyer of FGMhelp, *n* (%)					2 (11.1)

Skipped percentages are calculated using the total sample (*N*). Missing percentages are calculated using eligible respondents. Agreement percentages are calculated using valid responses only.

* Skipped responses: Participants who were not presented with the item due to questionnaire skip logic.

† Missing responses: Participants who were eligible to answer the item but did not provide a response.

‡ "Other" responses included webinars, combination from the different possibilities, online training, presentation during congress.

§ Multiple-response items: Percentages represent the proportion of eligible respondents selecting each option; percentages do not sum to 100%.

structured screening approaches, clear clinical pathways, and confidence-building interventions to translate awareness into consistent clinical practice.[19] Future studies could also extend this work to pediatric and adolescent gynecologists, for example through national professional networks such as Gynea (Swiss Working Group for Pediatric and Adolescent Gynecology), to explore whether KAP differ across pediatric subspecialties.

However, addressing this gap requires more than increasing knowledge alone. While targeted training can improve technical knowledge and thereby increase provider confidence, it may not automatically translate into higher quality, nonstigmatizing care.[21] In fact, increased institutional focus on FGM/C may inadvertently contribute to oversurveillance or reinforce racialized stigma.[22] At the same time, healthcare providers may continue to feel un-

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Table 3
Knowledge of FGM/C.

	Total Sample *N*	Skipped* *n* (%)	Eligible *n*	Missing† *n* (%)	Valid Responses *n*	Correct *n* (%)
Definition and types of FGM/C						
What is the definition of FGM/C?	89	0 (0)	89	0 (0)	89	62 (69.7)
FGM/C may include the removal of the entire clitoris.	89	0 (0)	89	0 (0)	89	3 (3.4)
Identification of the four communities in Zurich most affected by FGM/C	89	0 (0)	89	0 (0)	89	38 (42.7)
Are you aware of the WHO Classification System for FGM/C?‡	89	0 (0)	89	0 (0)	89	34 (38.2)
Identification of FGM/C WHO type 1.	89	55 (61.8)	34	1 (1.1)	33	16 (48.5)
Identification of FGM/C WHO type 4.	89	55 (61.8)	34	1 (1.1)	33	9 (27.3)
Identification of FGM/C WHO type 2.	89	55 (61.8)	34	1 (1.1)	33	10 (30.3)
Identification of FGM/C WHO type 3.	89	55 (61.8)	34	1 (1.1)	33	11 (33.3)
Health-seeking behavior						
Women and girls with FGM/C may avoid coming to see some health professionals because they fear that they will be stigmatized.	89	0 (0)	89	5 (5.6)	84	81 (96.4)
Women and girls with FGM/C may not seek health care because they fear legal consequences.	89	0 (0)	89	4 (4.5)	85	69 (81.2)
Health complications of FGM/C						
Women and girls with FGM/C may not know that FGM/C can cause health problems.	89	0 (0)	89	4 (4.5)	85	82 (96.5)
FGM/C may be associated with recurrent urinary tract infections.	89	0 (0)	89	4 (4.5)	85	76 (89.4)
FGM/C may cause chronic pain at the site where the woman/girl was cut.	89	0 (0)	89	4 (4.5)	85	83 (97.6)
Women and girls with FGM/C may experience anxiety, depression or PTSD related to their FGM/C.	89	0 (0)	89	4 (4.5)	85	83 (97.6)
Women and girls with FGM/C may experience traumatic flashbacks to their FGM/C during genital examination.	89	0 (0)	89	4 (4.5)	85	81 (95.3)
FGM/C treatment possibilities						
Can FGM/C-related sexual problems be treated?	89	0 (0)	89	5 (5.6)	84	48 (57.1)
Clitoral reconstruction is a surgery that may decrease pain caused by scar tissue on or near the clitoris of a woman who has FGM/C.	89	0 (0)	89	5 (5.6)	84	28 (33.3)
Ever heard of defibulation.	89	0 (0)	89	5 (5.6)	84	40 (47.6)
Ever heard of reinfibulation.	89	0 (0)	89	5 (5.6)	84	30 (35.7)
Knowledge of female genital anatomy						
Identification of labium minus.	89	0 (0)	89	6 (6.7)	83	79 (95.2)
Identification of hymenal caruncle.	89	0 (0)	89	6 (6.7)	83	81 (97.6)
Identification of urethra.	89	0 (0)	89	6 (6.7)	83	75 (90.4)
Identification of clitoris.	89	0 (0)	89	6 (6.7)	83	76 (91.6)
Knowledge of legal context						
It is illegal to perform FGM/C in Switzerland.	89	0 (0)	89	6 (6.7)	83	82 (98.8)
It is illegal to transport a person outside Switzerland for FGM/C (vacation cutting).	89	0 (0)	89	6 (6.7)	83	69 (83.1)
Are you familiar with cantonal regulations about reporting of FGM/C in children?‡	89	0 (0)	89	6 (6.7)	83	38 (45.8)
Possibility of reporting of suspicion of planned vacation cutting to cantonal authorities.	89	45 (50.6)	44	6 (6.7)	38	11 (28.9)

Skipped percentages are calculated using the total sample (*N*). Missing percentages are calculated using eligible respondents. Correct percentages are calculated using valid responses only.

* Skipped responses: Participants who were not presented with the item due to questionnaire skip logic.

† Missing responses: Participants who were eligible to answer the item but did not provide a response.

‡ Both questions are gateway questions determining skip logic for subsequent questions; they are not questions with a right or wrong answer; for the question about FGM/C classification, the 34 "correct" answers refer to the participant that said they knew or were not sure if they knew the FGM/C classification; the same logic applies for the question about cantonal regulations to report FGM/C in children.

certain about how to approach FGM/C in a culturally sensitive manner. This suggests that the challenges identified are not solely knowledge-based but also relational and contextual. This is in line with findings from scoping and qualitative research, showing that healthcare providers may struggle with cultural framing and communication when discussing FGM/C with patients from practicing communities, despite holding clear ethical opposition to the practice.[18,19] Accordingly, efforts should focus on competency-based curricula that integrate not only clinical content but also ethics, communication, and trauma-informed, nonstigmatizing counseling and care[21] to effectively translate ethical opposition and proactive attitudes into respectful, effective clinical interactions.

Another noteworthy finding of the present study is participants' broader opposition to genital alteration in children, including male genital alteration. This stance reflects an ongoing debate in the literature regarding the differential treatment of female and male genital alterations. While male genital alteration is often regarded as benign or beneficial,[23,24] FGM/C is universally condemned, including by major organizations such as the WHO and the United Nations, even for forms that are less invasive than penile circumcision (eg, pricking).[24,25] Both practices, however, are predominantly performed in children and without informed consent of the individual. In Switzerland, FGM/C is illegal, whereas male circumcision as a ritual practice is permitted and medicalized. This clear separation between female and male genital alterations raises ethical questions about how nonconsensual genital procedures in children are evaluated.[23,25] Recent debates have increasingly shifted away from strictly gender-based or harm-benefit comparisons toward considerations of informed consent. In this context, the concept of "genital autonomy" has been pro-

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Table 4
Attitudes Toward FGM/C.

	Total Sample *N*	Skipped* *n* (%)	Eligible *n*	Missing† *n* (%)	Valid Responses *n*	Strongly Disagree *n* (%)	Disagree *n* (%)	Don't Agree Nor Disagree *n* (%)	Agree *n* (%)	Strongly Agree *n* (%)
Attitudes toward FGM/C practice										
FGM/C is a religious practice.	89	0 (0)	89	7 (7.9)	82	16 (19.5)	16 (19.5)	22 (26.8)	23 (28.0)	5 (6.1)
Communities that practice FGM/C are honoring an important cultural tradition.	89	0 (0)	89	8 (9.0)	81	49 (60.5)	12 (14.8)	11 (13.6)	6 (7.4)	3 (3.7)
Communities that practice FGM/C are oppressive toward women and girls.	89	0 (0)	89	7 (7.9)	82	6 (7.3)	9 (11.0)	8 (9.8)	24 (29.3)	35 (42.7)
It is wrong to cut/surgically alter the genitals of any child (boy, girl or intersex).	89	0 (0)	89	8 (9.0)	81	2 (2.5)	5 (6.2)	8 (9.9)	11 (13.6)	55 (67.9)
Pricking (small puncture) of the clitoral hood, with a small needle, may be an acceptable alternative to more extensive FGM/C.	89	0 (0)	89	7 (7.9)	82	60 (73.2)	12 (14.6)	7 (8.5)	1 (1.2)	2 (2.4)
Parents who have their daughter's genitals cut should receive some punishment.	89	0 (0)	89	8 (9.0)	81	2 (2.5)	2 (2.5)	17 (21.0)	25 (30.9)	35 (43.2)
Attitudes toward girls/women with FGM/C										
Women and girls with FGM/C are less educated.	89	0 (0)	89	8 (9.0)	81	24 (29.6)	22 (27.2)	27 (33.3)	6 (7.4)	2 (2.5)
Women and girls with FGM/C are victims.	89	0 (0)	89	7 (7.9)	82	3 (3.7)	1 (1.2)	5 (6.1)	19 (23.2)	54 (65.9)
Women and teenagers with FGM/C do not frequently experience sexual pleasure.	89	0 (0)	89	9 (10.1)	80	1 (1.3)	6 (7.5)	27 (33.8)	26 (32.5)	20 (25.0)
Attitudes toward providing care to a person with FGM/C										
It is not within my job responsibility to address FGM/C.	89	0 (0)	89	8 (9.0)	81	46 (56.8)	25 (30.9)	9 (11.1)	0 (0)	1 (1.2)
It is not my place to condemn FGM/C.	89	0 (0)	89	7 (7.9)	82	41 (50.0)	27 (32.9)	7 (8.5)	5 (6.1)	2 (2.4)
It is important to include male partners and fathers in counselling about FGM/C.	89	0 (0)	89	8 (9.0)	81	1 (1.2)	2 (2.5)	6 (7.4)	32 (39.5)	40 (49.4)
I feel distressed when I deal with a girl's experience of FGM/C‡.	89	71 (79.8)	18	1 (1.1)	17	3 (17.6)	1 (5.9)	5 (29.4)	7 (41.2)	1 (5.9)
Girls or her parents may be offended if a health professional discusses FGM/C with them.	89	0 (0)	89	7 (7.9)	82	13 (15.9)	12 (14.6)	35 (42.7)	20 (24.4)	2 (2.4)
During a clinical consultation, if a patient does not talk about FGM/C, the professional should not mention it either.	89	0 (0)	89	7 (7.9)	82	37 (45.1)	34 (41.5)	10 (12.2)	1 (1.2)	0 (0)

Skipped percentages are calculated using the total sample (*N*). Missing percentages are calculated using eligible respondents. Agreement percentages are calculated using valid responses only.

* Skipped responses: Participants who were not presented with the item due to questionnaire skip logic.

† Missing responses: Participants who were eligible to answer the item but did not provide a response.

‡ Question only for participants that had already identified a teenager or a girl with FGM/C in their clinical setting.

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Table 5
Practices Related to FGM/C.

		Total Sample *N*	Skipped* *n* (%)	Eligible *n*	Missing† *n* (%)	Valid Resp. *n*					
Identification and management of FGM/C	**How often do you ask about FGM/C when taking a medical history?**	89	0 (0)	89	6 (6.7)	83					
	Never, *n* (%)					33 (39.8)					
	Rarely, *n* (%)					22 (26.5)					
	Sometimes, *n* (%)					6 (7.2)					
	Frequently, *n* (%)					3 (3.6)					
	Always, *n* (%)					1 (1.2)					
	Only girl/teenagers I consider at risk, *n* (%)					18 (21.7)					
	If you suspect FGM/C in a girl/teenager, do you recommend a genital examination to confirm it?	89	0 (0)	89	6 (6.7)	83					
	Never, *n* (%)					2 (2.4)					
	Rarely, *n* (%)					3 (3.6)					
	Sometimes, *n* (%)					3 (3.6)					
	Frequently, *n* (%)					6 (7.2)					
	Always, *n* (%)					15 (18.1)					
	I've never suspected FGM/C in a girl/teenager, *n* (%)					54 (65.1)					
	When you identify a girl/teenager with FGM/C, do you...‡						**Never *n* (%)**	**Rarely *n* (%)**	**Sometimes *n* (%)**	**Frequently *n* (%)**	**Always *n* (%)**
	Counsel her/her parents about mental health concerns?	89	71 (79.8)	18	2 (11.1)	16	2 (12.5)	0 (0)	1 (6.25)	2 (12.5)	11 (68.75)
	Counsel her/her parents about gynecological health concerns?	89	71 (79.8)	18	2 (11.1)	16	2 (12.5)	0 (0)	1 (6.25)	3 (18.75)	10 (62.5)
	Counsel her/her parents about sexual health concerns?	89	71 (79.8)	18	2 (11.1)	16	3 (18.75)	1 (6.25)	0 (0)	0 (0)	12 (75.0)
	Ask if she is satisfied with her sexual health according to her age?	89	71 (79.8)	18	2 (11.1)	16	3 (18.75)	2 (12.5)	4 (25.0)	2 (12.5)	5 (31.25)
	Provide information about sexual health according to her age?	89	71 (79.8)	18	2 (11.1)	16	1 (6.25)	0 (0)	5 (31.25)	3 (18.75)	7 (43.75)
	Screen for gynecological complications?	89	71 (79.8)	18	2 (11.1)	16	1 (6.25)	0 (0)	1 (6.25)	2 (12.5)	12 (75.0)
	Document FGM/C status in the chart?	89	71 (79.8)	18	2 (11.1)	16	0 (0)	0 (0)	1 (6.25)	1 (6.25)	14 (87.5)
	Refer her to specialized gynecologists or to organizations specializing in FGM/C?	89	71 (79.8)	18	2 (11.1)	16	1 (6.25)	0 (0)	1 (6.25)	2 (12.5)	12 (75.0)
	Use resources such as the protection letter against FGM/C or the recommendations on FGM/C for healthcare professionals?	89	71 (79.8)	18	4 (22.2)	14	7 (50.0)	0 (0)	2 (14.3)	4 (28.6)	1 (7.1)
	Inform her or her parents about the legal situation regarding FGM/C in Switzerland?	89	71 (79.8)	18	2 (11.1)	16	2 (12.5)	0 (0)	0 (0)	2 (12.5)	12 (75.0)
	If you identified a circumcised girl/adolescent or suspected that FGM/C was planned in the near future, would you first...	89	0 (0)	89	7 (7.9)	82					
	Report your suspicion to the child protection services, *n* (%)					4 (4.9)					
	Try and talk to her parents, *n* (%)					25 (30.5)					
	Seek information and advice from a specialized organization, *n* (%)					42 (51.2)					
	File a criminal complaint, *n* (%)					0 (0)					
	Look for information on the internet, *n* (%)					0 (0)					
	Read the Child Protection Guide of the Network against FGM/C Switzerland, *n* (%)					7 (8.5)					
	Other, *n* (%)§					4 (4.9)					
	Do you routinely examine the genitalia of the girl child at routine well-child visits?	89	0 (0)	89	7 (7.9)	82					
	Yes, *n* (%)					67 (81.7)					
	No, *n* (%)					8 (9.8)					
	Only if I suspect FGM/C or abuse, *n* (%)					7 (8.5)					
	I don't perform routine well-child visits, *n* (%)					0 (0)					

(*continued on next page*)

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Table 5 (*continued*)

		Total Sample *N*	Skipped* *n* (%)	Eligible *n*	Missing† *n* (%)	Valid Resp. *n*					
	Do you routinely inspect the genitalia of the girl child for FGM/C?	89	0 (0)	89	8 (9.0)	81					
	Yes, *n* (%)					31 (38.3)					
	No, *n* (%)					18 (22.2)					
	Only if I suspect FGM/C or abuse, *n* (%)					31 (38.3)					
	I don't routinely examine children's genitals, *n* (%)					1 (1.2)					
	Who do you screen for FGM/C?‖	89	0 (0)	89	7 (7.9)	82					
	All pediatric patients, *n* (%)					14 (17.1)					
	Children from communities I consider at risk, *n* (%)					24 (29.3)					
	Infants (0-11 mo), *n* (%)					18 (22.0)					
	Children (1-12 y), *n* (%)					23 (28.0)					
	Adolescents (13-18 y), *n* (%)					3 (3.7)					
	I don't screen for FGM/C, *n* (%)					29 (35.4)					
	On identification of a girl with FGM/C, do you ask the mother if she has also undergone FGM/C?‡	89	71 (79.8)	18	2 (11.1)	16					
	Yes, *n* (%)					11 (68.7)					
	No, *n* (%)					1 (6.3)					
	I'm not sure, *n* (%)					4 (25.0)					
	If yes, do you offer the mother referrals for FGM/C care?	89	75 (84.3)	14	3 (21.4)	11					
	Yes, *n* (%)					9 (81.8)					
	No, *n* (%)					1 (9.1)					
	I'm not aware of any referral services, *n* (%)					1 (9.1)					
Interpreter use							**Never *n* (%)**	**Rarely *n* (%)**	**Sometimes *n* (%)**	**Frequently *n* (%)**	**Always *n* (%)**
	How often do you use an interpreter if you and your patient or their parents don't speak the same language?	89	0 (0)	89	7 (7.9)	82	9 (11.0)	35 (42.7)	17 (20.7)	18 (22.0)	3 (3.7)
	For what reasons do you not always use an interpreter when needed?‖	89	3 (3.4)	86	9 (10.5)	77					
	No interpreter was available, *n* (%)					31 (40.3)					
	I don't have time to use the services of an interpreter, *n* (%)					21 (27.3)					
	I don't trust the quality of interpreter services, *n* (%)					4 (5.2)					
	I don't know how to access an interpreter, *n* (%)					6 (7.8)					
	It's too expensive, *n* (%)					25 (32.5)					
	Other, *n* (%)¶					22 (28.6)					
Confidence regarding FGM/C							**Not at all *n* (%)**	**Not really *n* (%)**	**Undecided *n* (%)**	**Somewhat *n* (%)**	**Very much *n* (%)**
	How confident are you that you can address the health concerns of girls/teenagers affected by FGM/C?	89	0 (0)	89	8 (9.0)	81	5 (6.2)	22 (27.2)	19 (23.5)	25 (30.9)	10 (12.3)
	How confident are you that you can identify FGM/C in a pediatric patient?	89	0 (0)	89	7 (7.9)	82	3 (3.7)	16 (19.5)	24 (29.3)	32 (39.0)	7 (8.5)

Skipped percentages are calculated using the total sample (*N*). Missing percentages are calculated using eligible respondents. Agreement percentages are calculated using valid responses only.

* Skipped responses: Participants who were not presented with the item due to questionnaire skip logic.

† Missing responses: Participants who were eligible to answer the item but did not provide a response.

‡ Question only for participants that had already identified a teenager or a girl with FGM/C in their clinical setting.

§ "Other" responses included a mix of possible answers (eg, internet search, then seek information and advice from specialized services, then talk to parents).

‖ Multiple-response items: Percentages represent the proportion of eligible respondents selecting each option; percentages do not sum to 100%.

¶ "Other" responses included translation by family member, use of translation tool instead of interpreter services, translation feed not covered by health insurance.

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posed, emphasizing that the removal of healthy genital tissue in children should not occur until they are able to participate meaningfully in decision-making.[25,26] In light of this evolving discussion, further research could explore healthcare providers' KAP regarding male genital alterations in the Swiss context.

Strengths and Limitations

This study has several strengths. It focused on office-based primary care pediatricians, an understudied but clinically important group for early identification and prevention of FGM/C, and applied a comprehensive KAP framework that enabled the identification of gaps between awareness, attitudes, and routine clinical practice. The survey was tailored to the pediatric and Swiss context, enhancing its relevance for local initiatives such as FGMhelp and providing a basis for future studies at cantonal or national level, including before-after evaluations of educational interventions.

Some limitations should be considered. The adapted questionnaire underwent expert review, translation/back-translation, and pilot testing, but formal face and content validation of the adapted version was not performed. Practices were self-reported and may be subject to reporting bias, although the low reported screening rates suggest limited social desirability effects. The cross-sectional design precludes causal inference, and the single-canton setting and modest response rate may limit transferability. In addition, the relatively small sample size likely limited statistical power for subgroup analyses. Finally, as this exploratory study relied on a knowledge score based on the proportion of correct responses rather than a validated psychometric scale, analyses were limited to descriptive statistics and simple group comparisons, and multivariable models adjusting for potential confounders were not performed.

Conclusion

Office-based primary care pediatricians in the canton of Zürich demonstrated good awareness of FGM/C and supportive attitudes toward its prevention and management, yet gaps remained in practical knowledge and routine implementation. Targeted, skills-based training, incorporating culturally competent, trauma-informed, and nonstigmatizing communication, alongside clear clinical guidance and accessible referral pathways, may improve early identification, prevention, and management in primary pediatric care. Regional and national resources such as FGMhelp and the Network against Female Genital Cutting Switzerland can support pediatricians through education, practical tools, and specialized expertise. In addition, FGM/C should be systematically incorporated into both pre- and postspecialization medical curricula, embedded within existing areas such as anatomy, genitourinary health, travel medicine, gender-based and child violence, and sexual and reproductive health. This integrated approach may better equip pediatricians with the knowledge and skills needed to recognize and manage FGM/C effectively in routine clinical care.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this work, the corresponding author used ChatGPT (OpenAI) to assist with language editing, text refinement, and improving clarity and structure of the manuscript. After using this tool, the corresponding author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

Data Availability

The questionnaire used in the current study is available in the Supplemental Materials. The datasets used and analyzed in this study are available from the corresponding author on reasonable request.

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Disclaimer

The views expressed in this article are those of the authors and do not necessarily reflect those of their affiliated institutions.

Ethical Approval

Ethical approval was waived by the Human Research Ethics Committee of the canton of Zürich, Switzerland (Req-2024-01490), as the study did not fall under the Human Research Act.

Author Contributions

JA and LB designed the study. LB collected, analyzed the data, and led the drafting of the manuscript. JA supervised the whole study and gave feedback as well as approval to submit the manuscript.

Conflicts of Interest

The authors declare that they have no competing interests.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jpag.2026.07.007.

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