



## Taking care of women living with female genital mutilation or cutting: Characteristics of the pool of users of two healthcare facilities in Turin, Northern Italy

Martina Romanisio <sup>a,b</sup>, Antonella Canavese <sup>c,d</sup>, Paola Castagna <sup>c</sup>, Federica Collini <sup>e,f</sup>,  
Elena Rubini <sup>g,\*</sup>, Sarah Gino <sup>e,f</sup>

<sup>a</sup> School of Medicine, Polo San Luigi Gonzaga, University of Turin, Corso Dogliotti, 38, Turin 10126, Italy

<sup>b</sup> Department of Neurosciences "Rita Levi Montalcini", University of Turin, Via Cherasco, 15, Turin 10126, Italy

<sup>c</sup> Centro Soccorso Violenza Sessuale, Presidio Ospedaliero Sant'Anna, Città della Salute e della Scienza, corso Spezia, 60, Turin 10126, Italy

<sup>d</sup> Department of Surgical Sciences, University of Turin, corso Dogliotti 14, Turin 10126, Italy

<sup>e</sup> Department of Health Sciences, University of Eastern Piedmont, via Solaroli 17, Novara 28100, Italy

<sup>f</sup> AOU Maggiore della Carità, Corso Mazzini 18, Novara 28100, Italy

<sup>g</sup> CRIMEDIM - Center for Research and Training in Disaster Medicine, Humanitarian Aid and Global Health, Università del Piemonte Orientale, Via Lanino 1, Novara 28100, Italy

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### ABSTRACT

Female genital mutilation (FGM) is a form of gender-based violence (GBV) that may lead to adverse consequences on the physical and psychological health of survivors. Patients living with FGM have unique health needs, which have to be addressed from the perspective of human rights and sexual and reproductive health. The aim of this study was to understand the characteristics of the pool of users of two services targeting this population in Turin, given the significance this may have due to the high migratory flows from countries where FGM is performed. A retrospective review of medical records of patients who accessed FGM-C related care in two healthcare facilities in Turin was performed. The most represented type of FGM was IIb. All patients were of African origin. Many presented psychological sequelae, while a smaller group presented uro-gynaecological symptoms. A high number of survivors were subjected to other forms of GBV during their lifetime. These findings highlight the need for an integrated and multidisciplinary service for the management of survivors of FGM.

### 1. Introduction

Female genital mutilation or cutting (FGM-C) is defined as any modification or removal, whether partial or total, of the external female genitalia (e.g., clitoris, labia, vaginal opening), carried out due to cultural or other non-medical reasons [1], generally connected to notions of purity around female sexuality and rooted in gender norms and roles [1–3]. FGM is a form of gender based violence (GBV), a human rights violation, in particular of the sexual and reproductive health and rights (SRHRs) of survivors, and a form of child abuse, when performed at a young age [4]. The World Health Organization (WHO) published a series of guidelines on FGM-C in order to improve knowledge, attitudes, and skills of health professionals in the prevention and the management of women living with FGM-C, including the health risks connected to this

practice, while also describing four types of FGM [1]. These include type I (e.g., partial or total removal of the clitoris and/or prepuce, respectively known as type Ia and Ib), type II (e.g., partial or total removal of the clitoris and Labia minora, respectively type IIa and IIb, with excision of Labia majora in type IIc), type III or infibulation (e.g., narrowing of the vaginal orifice by creating a seal through cutting and apposition of Labia minora and majora, in type IIIa; clitoris and prepuce are excised in type IIIb), type IV (e.g., all other harmful procedures) [5,6].

Education and training of providers on the variety of manifestations of FGM-C is crucial, since different types of mutilation can lead to specific adverse health outcomes [7]. Moreover, in several countries health professionals have a mandatory reporting duty of FGM cases, as enacted in Italy with the law 7/2006 [8]. It is estimated that more than 200 million girls and women have been victims of FGM, and that more than 3

\* Corresponding author.

E-mail address: [elena.rubini@uniupo.it](mailto:elena.rubini@uniupo.it) (E. Rubini).

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million girls are at risk of being subjected to this harmful practice each year [9]. FGM is widespread in 27 African States and in other countries, including Oman, Yemen, Indonesia, India, and Colombia [10]. Due to migratory flows, it has been evaluated that some 600,000 women living with FGM-C are settled in Europe and 180,000 are considered at risk in as many as thirteen states [11,12].

FGM-C provides no health benefit, but rather can profoundly affect women and girls physical and psychological well-being and can lead to adverse foetal consequences during delivery [13]. FGM is associated with the risk of health complications on the short- and long-term [14], correlated to the degree of severity of the procedure, and exacerbated by the suboptimal medical and hygienic conditions where this harmful practice is performed (e.g., unqualified operators and unsterilized settings and instruments) [1,15,16]. FGM may cause impairment of sexual functioning, due to the damage to nerve endings, to the development of painful scar tissue and adhesions, or due to the partial or total removal of erogenous structures (e.g., clitoral gland and Labia minora) [17]. The complexity of the condition of women living with FGM-C, provoked by the variety of negative outcomes on their physical, psychological, and social dimensions of health, requires a multidisciplinary management of these patients [18]. Survivors may need access to psychosexual counselling, to sexual and reproductive health education initiatives, as well as pelvic floor rehabilitation, and to reconstructive surgery [19,20].

From a public and global health perspective – in particular in settings where the health professional and the patient living with FGM-C do not share the same cultural background – while condemning this practice is an imperative, it is equally important for providers to be culturally sensitive, in order to avoid secondary victimization of survivors in clinical settings, as negative genital self-image and stereotypes surrounding a total loss of sexual capacity could result in adverse consequences on the overall health of individuals [21–25]. Cultural reasons justifying FGM-C can also revolve around notions of marriageability (e.g., connected to a woman's virginity) and of male sexual enjoyment, in some cases encompassing women being expected to have a passive sexual behavior [2]. It is important to understand that the internalization of these social norms may hinder patients' willingness to seek care and that there is a need to implement culturally sensitive sexual health educational activities [26].

Due to the high migratory flows from regions of the world where FGM-C is performed, some countries have already implemented services for the management of survivors' health needs. Italy is one of the largest recipient European countries for immigrants [27]. The metropolitan city of Turin in North-West Italy is characterized by high migratory flows from countries where FGM-C is performed [28]. Literature on FGM-C in Italy is scarce and rarely addresses this issue from a multidisciplinary perspective [29,30].

Based on a retrospective review of medical records filled out in two healthcare facilities (SVS - Sexual Violence Relief Centre of Sant'Anna Hospital and FGM Service at Ce.Mu.SS – Multidisciplinary Centre for Sexual Health) in Turin, the study was guided by the question: "What are the characteristics of the pool of users living with FGM-C and accessing care at SVS and Ce.Mu.SS.?" The findings of the present study could help to understand the epidemiology of migrant women survivors of FGM-C and accessing care in the two facilities and could inform future strategies for the implementation of an integrated and multidisciplinary Hub-Spoke Model for taking care of victims of FGM-C at regional level following national and international guidelines.

## 2. Methods

### 2.1. Materials and study setting

This study retrospectively reviewed medical records of patients who accessed care at Ce.Mu.SS. FGM Service and SVS at Sant'Anna Hospital, in the city of Turin. Medical records of survivors of FGM-C, in particular seven related to Ce.Mu.SS (November 2021 – May 3, 2022) and 66 at

SVS (May 3, 2003 – May 3, 2022), were purposively sampled. The study was approved by the Ethics Committee of the A.O.U. Città della Salute e della Scienza di Torino – A.O. Ordine Mauriziano di Torino (CE 112/2020).

Ce.Mu.SS. FGM Service, active since November 2021, perfectly complies with the multidisciplinary model due to the presence of two gynaecologists, a forensic doctor, and an obstetrician who, in collaboration with nursing staff, psychologists, and cultural mediators are able to provide high-level clinical assistance in the prevention, diagnosis, and treatment of FGM-C (e.g., psychological support, educational initiatives for the promotion of sexual health targeting survivors of FGM-C, training activities for providers serving this population, and referral to deinfibulation and reconstructive surgery) [31].

On the other hand, SVS has been active since May 2003 in the Emergency Department of Sant'Anna Hospital, and is dedicated to the management of the clinical and forensic needs of survivors of GBV of 14 years of age or older who were subjected to sexual violence or mistreatment during pregnancy. Access to care is guaranteed for free, 24/7, in the immediate aftermath of violence and in the long term. Patients accessing SVS are offered a three month follow up.

Since 2010, migrant women survivors of FGM-C and of different forms of GBV (e.g., sexual violence, torture, mistreatment, human trafficking, and sexual exploitation) in their home country, in transit, and in Italy accessed the service. SVS collaborates with a sociocultural mediation service, to facilitate the collection of the history of violence of patients, as well as to provide culturally sensitive care.

Taking into consideration the functioning of the two, while Ce.Mu.SS. FGM service has a specific protocol for patients living with FGM-C (Additional file 1), SVS has a general protocol for the management of GBV (Additional file 2), as FGM-C is only one of the many forms of abuses experienced by patients accessing the service [28,32].

It was not possible to analyse in aggregate form the case histories of the two centres, as their objective and functioning is distinct in form for various reasons. In addition to differences in protocols, SVS is a service situated in an Emergency Department and managing clinically and forensically survivors' needs, while Ce.Mu.SS. works on an outpatient basis in a situation of non-urgent medical care and focusing on the management of the clinical needs connected to the long-term sexual health and well-being of patients. Ce.Mu.SS. also offers patients living with FGM-C the possibility of referral to hospitals performing reconstructive surgery and, for pregnant ones, deinfibulation.

### 2.2. Statistical analysis

Descriptive statistics were reported as average and standard deviation for continuous variables or frequency and percentage for categorical variables. The association between two qualitative variables was performed using Pearson's Chi-square. Statistical significance was defined with a p-value  $\leq 0.05$ . When necessary ( $> 20\%$  of values  $\leq 5$  and/or presence of values  $< 1$ ), Cramer's V-test was used to test the association between variables. The Shapiro-Wilk test was used to assess the distribution of quantitative variables. All the above data were collected in an Excel spreadsheet and all statistical analyses were performed using the SPSS Statistics software (IBM SPSS Statistics for Windows, version 28.0; IBM Corp., Armonk, New York, USA).

## 3. Results

A total of seven women accessed care at Ce.Mu.SS. FGM service since its opening in November 2021 [31] until May 3, 2022. During medical examination a FGM-specific medical record was used to collect data (e.g., consequences on sexual and mental health, age when mutilation was performed, sexually transmitted infections (STI), sexual violence victimization), which informed the extraction of data in the present study.

In the period from May 3, 2003, to May 3, 2022, 2041 women

accessed care at SVS. Only medical records describing cases involving migrant women were included, narrowing down the sample to 285 cases. Of these, only 66 cases corresponded to women who had undergone any kind of FGM-C and were included in this statistical analysis. From the medical records of the 66 selected women, the variables collected through a questionnaire used during medical examination of FGM-C survivors were entered into a database (Excel). Extracted data included age, country of origin, past history of GBV, STI positivity, FGM-C type, uro-gynaecological and psychological sequelae.

Data will be presented separately for patients who accesses care at Ce.Mu.SS. and at SVS. Statistically significant data (e.g., on FGM type, age of the survivor, and uro-gynaecological and psychological symptoms) will be described.

Data from SVS and emerging from the statistical analysis was analysed in three different modalities: (a) at first, comparing all the countries of origin of patients, (b) then comparing the three most demographically representative countries (Nigeria, Ivory Coast, and Somalia), and, finally confronting data from Nigeria with that of the entirety of countries of origin of women living with FGM-C.

### 3.1. Women living with FGM-C who accessed care at Ce.Mu.SS.

The entirety of the sample was composed of patients of African origin reporting to have undergone FGM-C in their native state, identifiable as Burkina Faso (n = 2), Nigeria (n = 3), and Somalia (n = 2). One in seven women was granted refugee status and expressed concern about the possibility of reiteration of this harmful practice on members of her family. The average age of the women at care-seeking was 34.7 years (± 10.2).

Five out of seven women identified childhood (~10 years) as the time when cutting was performed, while one out of seven reported having been mutilated as an adult, before migration, and another had no recollection of what she experienced. Regarding mutilative types, there is a prevalence of type IIb mutilation (4 out of 7 women), followed by type Ib, type IIc, and type IIIa, which, as a result of childbirth, presented at gynaecological examination as FGM type IIa. Two out of seven women reported having been subjected to sexual violence. A Nigerian survivor was trafficked and abused, while a second woman from Burkina Faso described an episode of sexual violence immediately preceding FGM. The most mentioned symptoms were dyspareunia and abdomino-pelvic pain (6 out of 7 women), dysuria, pollakiuria, dysmenorrhea, as well as sadness and post-traumatic stress disorder (PTSD).

At the time of the study, it was not possible to describe any cases where reconstructive surgery or deinfibulation were performed after referral from Ce.Mu.SS. as the FGM service had been opened only a few months prior.

### 3.2. Women living with FGM-C who accessed care at SVS

At SVS, the average age of female patients with FGM-C was 26 years (± 5.5) with the youngest being 16 years old, and the oldest being 43 years old. The entirety of the patients living with FGM-C were of African origin (Fig. 1): 51 % came from Nigeria (n = 34), 18 % from Ivory Coast (n = 12), 20 % from Somalia (n = 13), and 4 % from Burkina Faso (n = 3).

Past medical history revealed that 97 % of these women had been victims of GBV, including SV, during their migratory route. Only two out of 66 women denied being victims of violence. Concerning STI positivity, for those who were subjected to GBV hepatitis B virus (HBV) infection was found in 15 % of cases, while in 9 % of cases the aetiological agent was hepatitis C virus (HCV). In the remaining 3 % of cases patients were found to be positive to tuberculosis.

The most represented mutilative type in this population was IIb, found in 27 out of 66 women (41 %). Type IIa FGM outcomes were described in 11 out of 66 women (17 %), while an equivalent number of female patients presented at medical consultation with type Ib

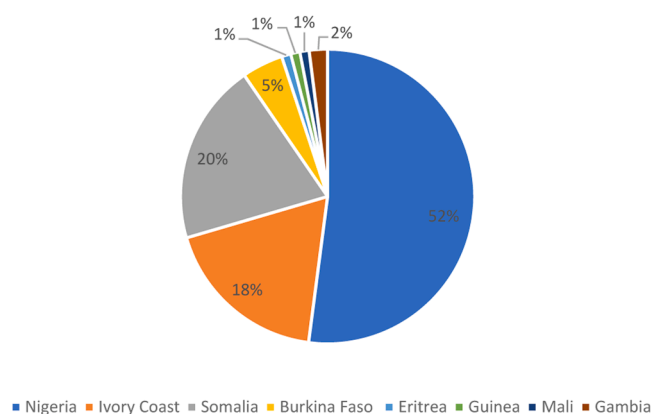


Fig. 1. Country of origin of patients accessing care at SVS.

mutilation. Type III or infibulation was less frequent (diagnosed in 12 % and 6 % of patients respectively for subtypes IIIa and IIIb). Within the examined sample, no women presented FGM type IIc or IV. Fig. 2 shows the diagnosis for different types of FGM in patients accessing SVS.

The country of origin was found to be statistically significantly associated with the type of mutilation found (p-value ≤ 0.002, Cramér's V 0.442) and was particularly appreciated when taking into consideration Somalia, a country with greater prevalence of the mutilative subtypes most impacting female integrity (e.g., IIIb) (Fig. 3).

Type IIb was the most represented in our sample, both within the Nigerian (47 %) and the Ivorian cluster (50 %). As for Somali patients, none of those who referred to the SVS presented with a type Ia FGM, and – although 15 % of the women were diagnosed with Ib mutilation – the most relevant percentages coincide with the third type, among which subtype IIIa is indicated in 46 % and subtype IIIb in 31 % of Somali women. Guinean women presented with FGM type Ib for all cases (n = 1).

Although 67 % of the patients presented no adverse uro-gynaecological symptoms, 22 complained of at least one sequela. The majority presented with one issue (n = 14), seven presented with two, one reported the presence of three. Specifically, the range of symptoms, juxtaposed with their relative frequencies, can be found in Fig. 4. The most prevalent was pelvic pain (26 %), followed by dysmenorrhea (8 %), and vulvovaginal itching (4 %). Less represented symptoms were dysuria, vulvodinia, leukorrhoea, postcoital bleeding, dyspareunia, and urinary incontinence. No women complained of mastodynia (Fig. 4).

In a second step, the association between uro-gynaecological symptoms, considered one by one, and country of origin was assessed,

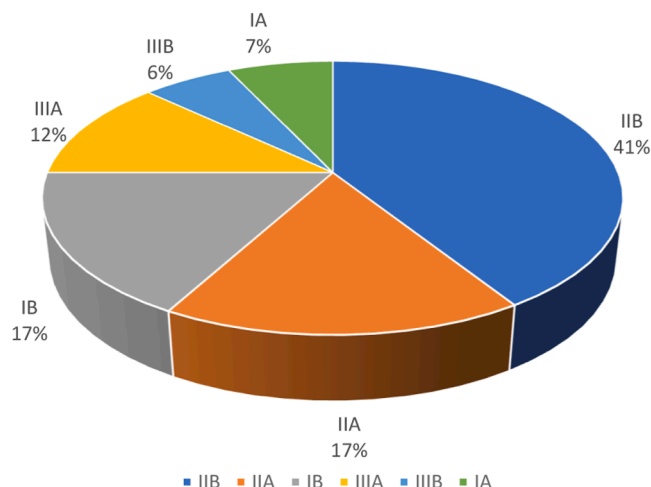


Fig. 2. Types of FGM of patients accessing care at SVS.

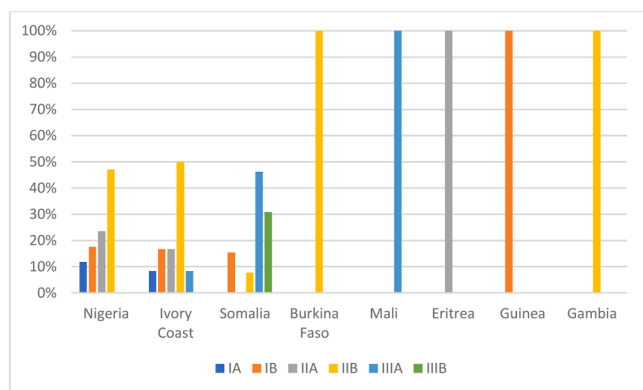


Fig. 3. Association between FGM type and Country for patients accessing care at SVS.

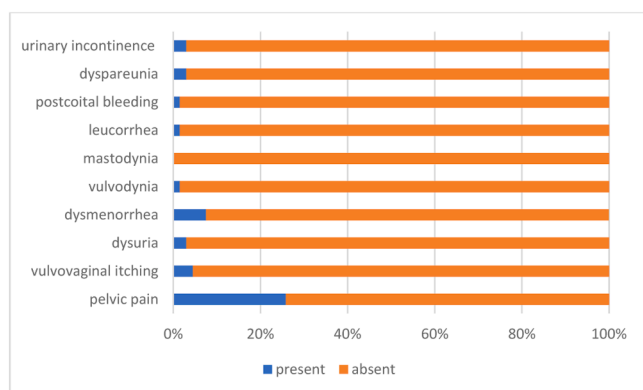


Fig. 4. Uro-gynaecological symptoms experienced by patients accessing care at SVS.

narrowing the latter to the three most represented nationalities within the source sample (e.g., Nigeria, Ivory Coast, and Somalia). Statistical significance was reached only for two symptoms, namely dysmenorrhoea (p-value ≤ 0.005) and urinary incontinence (p-value ≤ 0.026) (Fig. 5).

The latter was experienced by 15 % of Somali women, while no Nigerian or Ivorian patient reported this issue. Regarding dysmenorrhoea, Somali migrants were the population who reported the symptom the most (31 % of cases compared to 3 % of Nigerian patients).

Psychological sequelae were also described in medical records, with 83 % of patients presenting at least one symptom. Patients experienced fear (50 %), sadness (45 %), horror (26 %), insomnia and recurring nightmares (18 %), and emotional numbness (17 %). A statistically

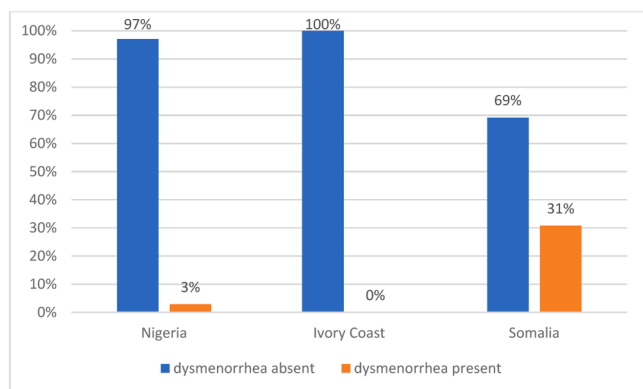


Fig. 5. Association between country of origin of patients accessing care at SVS and dysmenorrhoea.

significant association was found between country of origin (Nigeria, Ivory Coast, and Somalia) and fear (p-value ≤ 0.003), which was more frequent in women coming from Nigeria (71 %) compared to Somali patients (15 %). Conversely, patients coming from the Ivory Coast presented equal rates of fear and absence of it. (Fig. 6).

When comparing Nigeria with the set consisting of the remaining countries, we reiterated a statistically significant association (p-value ≤ 0.001), with fear being reported more frequently when describing the condition of Nigerian women accessing care (71 %) compared to the population originating from the remaining states (28 %) (Fig. 7).

Statistical significance (p-value ≤ 0.001) is also detectable when associating country of origin (Nigeria, Ivory Coast and Somalia) and sadness, but was not found in other psychiatric symptoms.

#### 4. Discussion

The medical records analysed in our study described the condition of young African women, of 26 years of age on average, mostly coming from Nigeria (51 %), and who reported multiple episodes of violence suffered in their home country, during migration, and in Italy.

While the majority of patients living with FGM-C and accessing SVS did not report physical symptoms related to FGM-C (for 67 % of cases), a significant number of patients described mental health sequelae (83 % had at least one symptom), among which fear was the one more frequently described by patients from Nigeria (71 %) compared to patients from other countries of origin (28 %). Regarding Ce.Mu.SS, in the present study data was presented in a more aggregated form (e.g., physical and psychological outcomes altogether), with 85 % of patients presenting at least one symptom.

It should be noted that some of the patients of SVS who were subjected to FGM associated with other forms of violence were found to have a STI originating from HBV (15 %) and HCV (9 %). If it is true that an abused woman has a higher probability of contracting STIs compared to the general population [33–35], this chance increases reasonably due to infection and lesions resulting from modification or cutting [36]. However, it is not possible to establish a certain causal link between the STI and the mutilation suffered, as contact with various aetiological agents in our study population could trace back to both FGM and sexual assault. A similar reasoning can also be applied to other reported uro-gynaecological and psychological symptoms [1,37,38]. Sexual and other forms of GBV separated from FGM were in fact described in 97 % of cases, corresponding to 64 out of 66 women accessing care at SVS.

The most represented type of FGM in our study is IIB, described in 41 % of cases, followed by IIA and IB (17 % each), IIIA (12 %), IIIB (6 %), and IA (7 %). No women were reported to have undergone FGM type IIC or type IV. For the Nigerian and the Ivorian groups, FGM type IIB was the most described, respectively in 47 % and 50 % of cases. This is coherent with scientific literature describing types I and II as accounting for

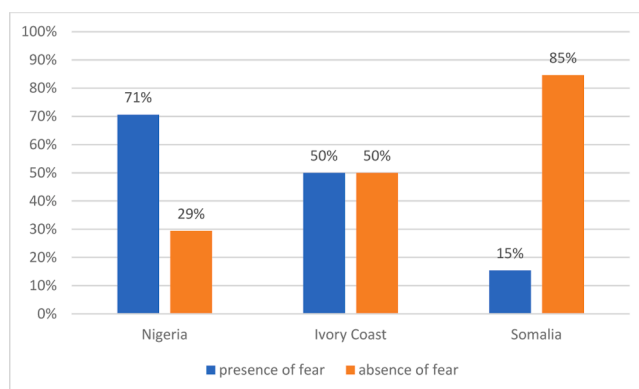
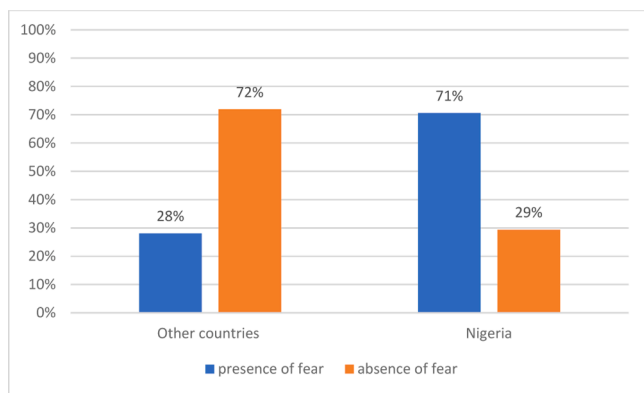


Fig. 6. Association between country of origin and fear for patients accessing care at SVS.



**Fig. 7.** Comparison of fear expressed by patients accessing care at SVS originating from Nigeria and other countries.

80–85 % of all FGM types in the affected population and type II excisions being more frequent in Nigeria [39,40].

A statistically significant association concerns the comparison between the country of origin and the type of cut found, in particular within the Somali context. In this country, tradition encourages FGM type III, also known as infibulation, the most serious and destructive form of mutilation affecting female genitalia. The uro-gynaecological visit confirmed the presence of subtype IIIa in 46.2 % of the cases and subtype IIIb in 30.8 % of Somali women enrolled at SVS.

It is interesting to highlight how, even among women accessing care at Ce.Mu.S.S., the most represented type of FGM was IIB (4 women out of 7) and the only case of type IIIa has been found in one woman whose ancestry was Somali. A significant statistical association, when the uro-gynaecological symptoms were considered, was also appreciated between dysmenorrhea (in 7.6 % of the 22 cases out of 66 who presented a symptom) and the country of origin and, subsequently, between dysmenorrhea and the type of mutilation. Dysmenorrhea affected the Somali population in 30.8 % of cases, and an increase in the frequency of this symptom occurred in FGM type IIIa and IIIb, with a value equal to 50 % in survivors with subtype IIIb. It can be deduced, in agreement with what has been found in the literature [41], that the most prevalent type of FGM-C in Somalia is type III, which has a greater impact on the physical and psychological well-being of women resulting in increased risk for and prevalence of symptoms such as dysmenorrhea and urinary incontinence, intimately connected to the anatomical narrowing determined by infibulation [6,42,43].

Knowing the age at which the cut was performed in different countries of origin allows to implement appropriate preventive plans. Data obtained from SVS from our study show a greater frequency in the age group 15–20 (14 %), followed by 10–14 (12 %). This partially disagrees with what is described in recent literature, including studies conducted in Italy, where mutilation is described as occurring around nine years of age. Initiation beyond this age is more common in Egypt, [15] but no women in our study originated from that region. Most of patients in our sample at SVS (52 %) moved from Nigeria, and this data is coherent with the findings of other studies conducted in Italy [44].

In Nigeria, more than 85 % of FGM are carried out before the age of five [45], a figure in stark contrast to our results, where women accessing services reported having been mutilated in an age ranging between 10 and 20 years old. The data concerning Somali and Ivorian migrant women differ widely from the literature [46,47], in particular for what concerns Ivory Coast where our findings show that FGM was performed around 15–20 years of age [48].

International efforts to address FGM have primarily focused on preventing this harmful practice, with less attention to the treatment of associated health complications and caring for survivors, including through educational initiatives targeting providers working with populations living with or at risk of FGM. A study recently conducted in the

United Kingdom highlighted the possible detrimental effects (e.g., lack of trust and avoidance of care-seeking behaviours) of FGM-safeguarding services targeting children perceived “at risk” due to their geographical or ethnic origin, when these initiatives clashed with the reason that led patients to accessing care [49,50]. On these occasions, mothers survivors of FGM described being perceived by providers only as possible perpetrators and not as victims of human rights abuses themselves [49, 50]. In addition, a disproportionate preventing response could avert efforts and funding from survivors of FGM-C [50]. Conversely, the findings of the present study confirm how attention is also needed on addressing the negative outcomes of FGM-C and providing the highest attainable standards of care.

The creation of services for the management of health consequences of FGM-C could also serve to empower patients, who in our sample were often victims of different forms of GBV during their lifetime. Victims of sex trafficking and of sexual assault – once objectified and exploited by their abusers – could finally have their sexual and reproductive rights respected and achieve the highest attainable standards of health, including SRH [51], encompassing also having their bodily integrity and autonomy respected, have access to services for the prevention, detection, and treatment of STI and to psychosexual counselling, have safe and pleasurable sexual experiences if deciding to be sexually active, manage menstruation in an hygienic way, and having access to SRH services in conditions free from discrimination, coercion, and violence [51].

FGM education and training of health providers is needed in order to support survivors, to avoid discrimination, and to create a safe environment where they can share their concerns during medical consultation or examination [52]. Health professionals should advocate for and protect the human rights of survivors of FGM-C, as well as prevent re-iterations of this harmful practice on those who have not yet been submitted to it [18,53]. This goal could be achieved only through a multidisciplinary team of professionals managing the condition of patients living with FGM-C from a physical (e.g., sexual, reproductive, and holistic health), psychological (e.g., psychosexual counselling), and legal perspective (e.g., mandatory reporting of FGM cases).

Coordinating the efforts of SVS and Ce.Mu.SS. could serve to manage the condition of patients living with FGM-C and often victims of other forms of GBV in different phases, from a documentation of the human rights abuses they suffered, to the recovery phase, empowering them and adhering to guidelines advocating for a multidisciplinary approach to care for survivors of FGM-C.

## 5. Limitations

Due to the limited sample size and to the different nature of FGM-C for each patient accessing care, the results of the present study are not generalizable to the heterogenous population of women living with FGM-C. More studies on survivors of FGM-C should be conducted and focus on specific types of FGM or on populations with the same geographical and cultural origin. The study could be replicated in other facilities managing survivors of FGM-C, in order to monitor the epidemiology of this population in Italy, in Europe, or other regions. It is not possible to predict care-seeking behaviours of survivors of FGM-C, and therefore qualitative studies on their willingness to access an integrated and multidisciplinary service should be conducted or conversely qualitative data could be collected from patients who already accessed the service, in order to understand how to further implement the management of their needs. Moreover, a qualitative phase could also be conducted with providers from healthcare facilities, understanding how to better coordinate their efforts in providing support to this population. For some of the health issues presented by patients in our sample, it is possible that some of the consequences may be causally linked to other forms of abuse.

## 6. Conclusion

FGM-C is a form of GBV and a violation of the human rights of survivors, in particular of their SRHRs, that can possibly lead to adverse and type-dependent physical and psychological sequelae. The study focused on the description of uro-gynaecological and psychological symptoms reported in the medical records of women living with FGM-C and accessing care at SVS and Ce.Mu.SS., however, it is not possible to establish an unequivocal causal link between FGM-C and the sequelae of symptoms, as they could be related to other kinds of violence and traumatic events encountered during the migration journey. Nevertheless, the pool of users accessing these services due to migratory flows and the physical and psychological sequelae documented confirm the necessity of implementing a Hub-Spoke Model at regional level, in order to manage the condition and the needs of survivors of FGM-C in a multidisciplinary and holistic manner. Further integrating the services offered at SVS and Ce.Mu.SS. in a coordinated effort could serve as a first step in reaching this goal, ideally with the creation of a health unit located within a larger medical centre and dedicated to sexual and reproductive health.

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## CRedit authorship contribution statement

**Sarah Gino:** Writing – review & editing, Supervision, Methodology, Conceptualization. **Martina Romanisio:** Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Antonella Canavese:** Writing – review & editing, Validation, Supervision, Data curation. **Paola Castagna:** Writing – review & editing, Validation, Supervision, Data curation. **Federica Collini:** Writing – review & editing, Validation. **Elena Rubini:** Writing – review & editing, Validation, Methodology.

## Declaration of Competing Interest

The authors declare that they have no competing interests.

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## Additional files

None.

## Ethics approval and consent to participate

The research protocol was organised according to The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans (2013), to the General Data Protection Regulation (2018) and to Provision no. 146/2019 of the Italian Privacy Guarantor. The study was approved by the Ethics Committee of the “A. O.U. Città della Salute e della Scienza di Torino—A.O. Ordine Mauriziano di Torino” (CE 112/2020) on 6 July 2020.

## Consent for publication

Not applicable.

## Acronyms

Ce.Mu.SS, Centro Multidisciplinare Salute Sexuale (Multidisciplinary Center for Sexual Health); FGM, female genital mutilation; FGM-C, female genital mutilation/cutting; GBV, gender-based violence; HBV, hepatitis B virus; HCV, hepatitis C virus; SRH, sexual and reproductive health; SRHR, sexual and reproductive health and rights; STI, sexually transmitted infection; SVS, Soccorso Violenza Sexuale (Sexual Violence Relief Center); WHO, World Health Organization.

## Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.forsciint.2024.112344](https://doi.org/10.1016/j.forsciint.2024.112344).

## Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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