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# Awareness knowledge and preparedness regarding female genital mutilation cutting among obstetrics and gynecology trainees

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## Abstract

**Purpose** Female Genital Mutilation/Cutting (FGM/C) affects millions of women worldwide and is increasingly encountered in healthcare systems of high-income countries due to migration. Healthcare professionals, particularly obstetricians and gynecologists, play a crucial role in identifying and managing the health consequences of FGM/C; however, previous studies suggest that knowledge and training on this topic may be insufficient. Evidence regarding the awareness and preparedness of trainees in Obstetrics and Gynecology remains limited. Therefore, the aim of this study was to assess awareness, knowledge, and preparedness regarding FGM/C among trainees in Obstetrics and Gynecology in several European countries.

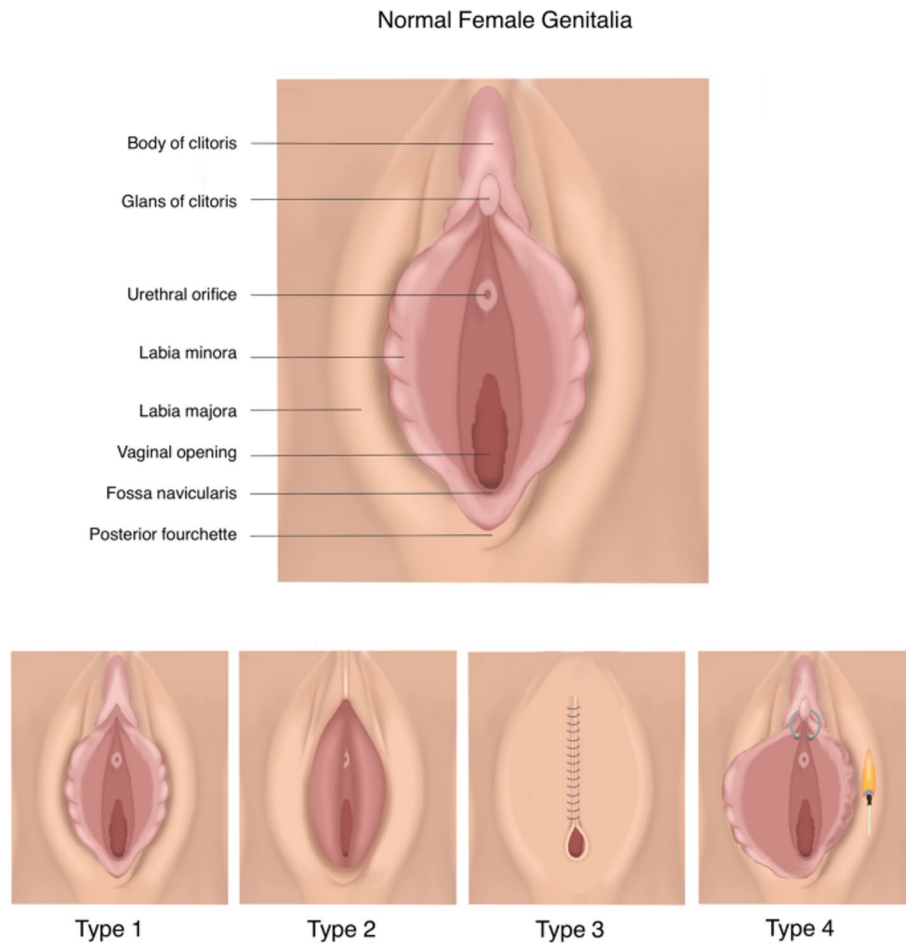
**Materials and methods** An observational study was conducted through a survey administered to trainees in Obstetrics and Gynecology from various hospitals in Italy, Malta, Portugal, Poland and Switzerland. The questionnaire was divided into three sections: sociodemographic variables, knowledge of FGM/C, opinions on necessary training and laws. Data collection took place between July 2023 and January 2024.

**Results** A total of 51 trainees participated in the survey, respondents were from Italy ( $n=46$ ) and Malta ( $n=5$ ) and in their third year of specialization. All participants had heard of FGM/C, only 6% had attended training courses on the subject, 92% expressed a need for further training, and 63% had treated at least one patient with FGM/C; all respondents agreed that FGM/C is a violation of human rights and 98% believed that there should be laws against the practice. Despite this, opinions were divided on whether FGM/C could be eradicated by 2030.

**Conclusion** The study highlighted the need for increased training on FGM/C among Obstetrics and Gynecology trainees. Given the likelihood that they will encounter patients affected by FGM/C, healthcare professionals must be better equipped with the knowledge and skills to address this issue.

**Keywords** Female genital mutilation, FGM, Training and education, Obstetrics and gynecology trainee, Awareness, Knowledge





**Fig. 1** Normal female genitalia and the four types of genital mutilations

## 1 Introduction

Female genital mutilation/cutting (FGM/C) refers to all procedures involving the partial or total removal of external female genitalia for non-medical reasons (Fig. 1) [1]. The practice is rooted in cultural, social, economic, hygienic-aesthetic, and spiritual beliefs and is recognized internationally as a violation of human rights [1–5]. It is estimated that more than 200 million women and girls worldwide have undergone FGM/C, primarily in countries in Africa and parts of the Middle East, and over 4 million girls remain at risk each year [1–5]. The World Health Organization (WHO) classifies FGM/C into four main types based on the anatomical extent of the procedure: Type I (clitoridectomy), which involves partial or total removal of the clitoris and/or the prepuce; Type II (excision), which consists of partial or total removal of the clitoris and the labia minora, sometimes with removal of the labia majora; Type III (infibulation), characterized by narrowing of the vaginal opening through the creation of a covering seal formed by cutting and repositioning the labia; and Type IV, which includes all other harmful procedures to the female genitalia for non-medical purposes, such as pricking, piercing, incising, scraping, or cauterization [1]. Beyond its cultural context, FGM/C represents an important public health issue because it may cause numerous immediate and long-term complications, including severe pain, infections, hemorrhage, infertility, obstetric complications, and psychological consequences [6].

Due to increasing migration from countries where the practice is prevalent, healthcare professionals in Europe and other high-income regions are increasingly likely to encounter women affected by FGM/C during routine clinical practice [6]. Obstetricians, gynecologists, and midwives play a particularly central role in the care of these women, as their clinical activity focuses on sexual and reproductive health, pregnancy, and childbirth [7–9]. Previous studies conducted among healthcare professionals in different countries have shown that many clinicians encounter patients with FGM/C but often report insufficient training, limited familiarity with guidelines, and uncertainty in recognizing the different types of FGM/C or managing related complications [6]. These findings highlight the importance of adequate education and training for healthcare providers involved in women's health [6, 7, 9].

However, most of the available literature has focused on practicing healthcare professionals, while relatively little attention has been paid to the level of awareness and preparedness among trainees who are still undergoing specialist training [7–9]. Understanding the knowledge, clinical experience, and educational needs of trainees in Obstetrics and Gynecology is particularly relevant, as they represent the future workforce responsible for managing the health consequences of FGM/C [2, 8, 9]. Moreover, assessing their preparedness may help identify gaps in current training curricula and inform the development of targeted educational programs.

Previous surveys conducted among healthcare professionals in different countries have consistently shown variable levels of knowledge and preparedness regarding FGM/C [7, 9]. While awareness of the practice is generally high, many professionals report limited training, difficulties in identifying the different types of FGM/C, and uncertainty in managing related complications or counseling affected women [6, 9]. However, many of these studies have been conducted within single countries, often focusing on practicing healthcare professionals rather than trainees, and have involved heterogeneous professional groups. These limitations highlight the need for additional studies specifically focusing on trainees in Obstetrics and Gynecology, who represent the future workforce responsible for the care of women affected by FGM/C.

Therefore, the aim of this study was to assess awareness, knowledge, and preparedness regarding FGM/C among trainees in Obstetrics and Gynecology in several European countries [1, 4, 7, 9].

## 2 Materials and methods

### 2.1 Development of a questionnaire

We found within the literature questionnaires aimed at healthcare personnel which had the objective of studying awareness about FGM. By repeating questions already included in previous surveys (and validated), it wasn't necessary to revalidate our questionnaire [6, 10–18].

The methodology developed by Arksey and O'Malley was used to search the literature [19]: Selection criteria were based on PICO criteria (Population, Phenomenon of interest, Context) and were [20]: Population: healthcare professionals; Phenomenon of Interest: inclusion criteria: studies with questionnaire items created to evaluate opinions, knowledge and awareness of health workers on FGM; exclusion criteria: complications about FGM and treatment, awareness and perception of the population regarding FGM, psycho-social aspects and information related to FGM; Context: FGM. Articles

published from January 2010 to July 2023 on PubMed were taken into consideration: the following search terms were used to query the database: (“Healthcare personnel” OR “healthcare provider\*” OR “healthcare worker\*” OR “healthcare professional\*” OR “healthcare staff” OR “health care personnel” OR “health care professional\*” OR “health care provider\*” OR “health care worker\*” OR “health care staff” OR “health worker\*” OR “health provider\*” OR “health personnel” OR “health professional\*” OR “health staff” OR “trainee\*” OR “specialist\*” OR “medical personnel” OR “medical professional\*” OR “medical worker\*” OR “medical provider\*” OR “medical staff” OR “pediatricians\*”) AND (“FGM” OR “female genital mutilation” OR “female circumcision” OR “female cutting” OR “female mutilation”) AND (“Survey” OR “questionnaire\*” OR “form” OR “quiz” OR “question sheet” OR “opinion pool”) AND (“Awareness” OR “clinical experience” OR “knowledge” OR “attitude\*” OR “practice\*” OR “consciousness” OR “perception\*” OR “acknowledgment” OR “comprehension” OR “understanding” OR “sensitivity” OR “insight”).

One non-English article was excluded, resulting in 59 studies. Titles and abstracts were analyzed. Finally, 17 articles were included in the systematic review. After reviewing these articles, 10 have been integrated and summarized. The remaining 7 were excluded because contained questionnaires with same items already present in other articles.

The correct answers included in the questionnaire were defined according to internationally recognized references, particularly the World Health Organization (WHO) classification of FGM/C and available clinical guidelines regarding its complications, epidemiology, and management [1]. In addition, previously published surveys investigating healthcare professionals’ awareness and knowledge of FGM/C were used to identify commonly assessed domains and to inform the structure of the questionnaire. This approach ensured that the items and the expected answers were consistent with current scientific evidence and international recommendations.

## 2.2 Type and design of the study

A descriptive observational study was conducted. The “Google Forms” application was used to create the survey, and the questionnaire was available from July 2023 to January 2024. The survey link was disseminated online through social media platforms and messaging groups commonly used by medical trainees, including Facebook®, Instagram®, LinkedIn®, and WhatsApp®. The same dissemination strategy was used across the different countries, primarily through professional networks and trainee groups connected to the authors’ institutions.

## 2.3 Interest group

The questionnaire was addressed to trainees in Obstetrics and Gynecology working in several European institutions, including hospitals in Italy, Malta (Mater Dei Hospital), Portugal (Hospital de Santa Maria), Poland (Szpital Kliniczny–Polna), and Switzerland (Geneva University Hospital). These institutions were selected based on existing academic and professional collaborations with the authors, which facilitated the distribution of the survey among trainees.

The questionnaire was administered in English, which is widely used in medical education and international scientific communication across Europe. For this reason, a formal translation process was not required.

Although the management of women affected by FGM/C may involve several health-care professionals, including nurses and general practitioners, the present study specifically focused on trainees in Obstetrics and Gynecology. This decision was made because obstetricians and gynecologists are directly involved in the care of women's sexual and reproductive health, pregnancy, and childbirth, and are therefore among the healthcare professionals most likely to encounter and manage FGM/C and its complications during clinical practice.

## 2.4 Structure of the questionnaire

The questionnaire was divided into 3 sections:

(1) Sociodemographic variables and relationship that the trainee has had about FGM; (2) knowledge on the topic; (3) participants' opinions.

Each question could only have one answer. Participant data was kept anonymous.

The questionnaire is presented in the Appendix A.

## 3 Results

### 3.1 Participant's background

#### 3.1.1 Sociodemographic variables

Fifty-one trainees responded to the questionnaire. Unfortunately, no one responded from Portugal, Poland, and Switzerland. Most of the trainees were in the 3rd year of specialization. 46 participants were from Italy while 5 from Malta.

#### 3.1.2 Previous relationship with FGM

All the trainees have previously heard of FGM: 33% of participants reported that they had first heard about FGM/C through general knowledge or personal interest (e.g., media, personal reading, or other informal sources), while 25% learned about it during university education, 22% for having meet patients with FGM, 8% for scientific literature, 2% from training courses, 10% from another source and none from brochures.

- 94% have never participated in training courses;
- 92% of participants said they needed a training course.
- 63% of participants reported having encountered at least one woman with FGM/C during clinical practice; 28% clinically examined one woman with FGM, 47% from 2 to 5 women, 16% from 6 to 10 women, 6% from 11 to 30 women, 3% 31 to 50 women and none more than 50 women; the women involved were 25% less than 25 years old, 72% between 25 and 35 and 3% between 35 and 45.
- Of this 63% who have seen a woman with FGM, 26% said they were able to recognize the type of FGM, 16% were unable to and 58% were unsure.

Almost all of them (97%) reported pregnancy, complications related to FGM or prevention as reason for the medical visit, while 3% reported other unspecified diseases.

- During the visit, 20% stated they haven't experienced difficulties or discomfort in relationships with women with FGM, 58% sometimes, 6% often, 8% always, 8% were unable to answer. Regarding discomfort felt by the patient, 22% never felt it, 50% sometimes, 11% often, 6% always and 8% were unable to answer.
- 8% have been asked to carry out deinfibulation; however, only 4% of participants said they knew how to realize this operation.

- Of all participants, 41% have never told a patient about the existence of a center specialized in FGM, 16% sometimes, 8% often, 6% always and 29% were unable to answer.

### 3.2 Participant's knowledge

In this section, trainees were asked to answer questions aimed at understanding the participants' knowledge about FGM (one correct answer).

Questions 20, 21: almost all (93%) participants correctly identified Africa as the area of the world where FGM/C is most frequently performed. Most correctly responded that there are multiple factors leading to FGM/C. Single factors cited were: "tradition" (10%), makes a woman more marriageable (12%); 14% that it's linked to the fact that prevents a woman from experiencing pleasure during sexual intercourse; 12% that it's required by religion; 51% answered all of the above (correct answer); 2% were unsure.

Questions 22, 23, 24, 25, 26: participants correctly identified type 1 (71%), type 2(35%), type 3 (41%) and type 4 (33%) patterns.

Question 27: 37% answered yes, 33% answered no, 29% didn't know (correct answer).

Question 28: 12% answered recurrent urinary tract infections, 8% lower urinary tract symptoms, 6% sexual dysfunctions, 2% urogenital fistula, 2% answered "other", 71% all the above (correct answer).

On average, participants answered 5 out of 9 correct answers.

### 3.3 Participant's perceptions

In this section the participants were asked to express some personal opinions:

- Question 29: 20% agreed, 59% didn't agree, 21% didn't know the answer.
- Question 30: 100% of participants agreed.
- Question 31: 86% agreed, 4% didn't agree, 10% were unable to respond.
- Question 32: 71% responded during the speciality course, 29% during the university course.
- Statement 33: 100% of participants agreed.
- Statement 34: almost all participants agreed (98%).
- Statement 35: 39% agreed, 26% didn't agree and 35% were unable to respond.

Nobody added any comments at the end of the questionnaire.

## 4 Discussion

### 4.1 Premise

This multicenter survey aimed to evaluate awareness and preparedness regarding FGM/C among Obstetrics and Gynecology trainees.

### 4.2 Trainees' awareness

Various studies showed that healthcare personnel frequently encounter women with FGM: in an Australian study 10.3% of 497 pediatricians had meet children with FGM [18]. In an Italian study, 71.5% of 102 participants (obstetricians, gynecologists, pediatric nurses and pediatricians) had encountered at least one woman with FGM [6]. In another study in UK, 87% of 607 gynecologists had met at least one woman with FGM during clinical activity [13]. In our study, 63% of trainees had clinically examined a woman with

FGM. We found a good awareness of trainees, as everyone heard of FGM before. One study reported that professionals who worked for more years learned more about FGM through clinical experience, while staff who had worked for fewer years learned more through training courses; [7] in our study, however, young postgraduates rarely learned through training courses (2%), while the majority learned through personal culture and during university (59%). Among participants, 6.3% participated in training courses; 92% reported needing a course. This differs from two previous studies where healthcare professionals who participated in training courses were 45%: the participants had more years of experience than the trainees in our study and this suggests that there is a greater need for training courses from the beginning of specialization [6, 13]. However, university education on FGM appears to have improved ultimately compared to a previous study [7]. To improve the knowledge of healthcare personnel, a study suggests that it would be useful to make guidelines available and make their existence known, provide postgraduate courses, include training on FGM in university [21]. The courses mustn't only concern diagnosis and treatment, but also relationships, accompaniment, guidance. In 2022, the WHO published two Guidelines [22].

Most of trainees and patients had trouble or discomfort during the relationship. These difficulties, as reported in another study, can be addressed also using Guidelines [12].

Regarding deinfibulation, 98% of trainees declared they didn't have the ability to make it, while regarding the ability to refer the patient to reference structures, only half reported having been capable of doing so.

#### 4.3 Trainees' knowledge

On average, there were 5/9 correct answers in the second section; there was no difference in scores between males and females. No correlation was found either with the year of specialization or with the region or country of work.

The participants responded much better to general knowledge questions (questions 19, 20, 21, 26 and 27) with a score of 64% correct answers, compared to the clinical ones, in which they were asked to indicate the type of FGM (questions 22, 23, 24 and 25), with a correct score in 45% of cases. We noticed a correlation between the clinical ability and the number of visits of women with FGM. In fact, from a score of 40% of correct answers for those who have never encountered a woman with FGM, it rises to 72% for trainees who examined at least 6 women. Moreover, trainees who claimed to have been able to correctly recognize the types of FGM during previous visits, identified right the type of FGM in 69% of cases, compared to 41% of those who said they were unable to correctly identify the type of FGM.

Interestingly, although some trainees reported being able to recognize the different types of FGM/C during clinical encounters, their performance in the questionnaire suggests that this confidence may not always correspond to accurate knowledge. As said, only 69% were able to do so correctly in the questionnaire. This discrepancy suggests a possible overestimation of one's own competence, which could represent a barrier to seeking further training. For this reason, structured educational programs integrated into specialty training curricula may be particularly important to ensure that all trainees acquire adequate knowledge and practical skills in the management of FGM/C.

We identified a good level of knowledge of complications among participants, like other studies [12, 13].

Question 20 focuses on motivations that lead to practice FGM and 51% of participants answered correctly (in another paper all the answers were right except “it is required by their religion”; [12] we considered also this answer correct, because among the Islamic authorities of the past (until around 1995), FGM was considered acceptable and, nowadays, there may still be individuals who believe they are carrying out the practice according to religious beliefs) [23, 24].

Question 21 explored participants’ knowledge of the sociocultural motivations associated with the practice of FGM/C. Although major international organizations emphasize that FGM/C is not required by any religion, previous studies have shown that in some communities the practice is perceived as being supported by religious beliefs, which may contribute to its persistence [23, 24].

- For this reason, the option including religious justification was considered among the possible motivations associated with FGM/C [23, 24].
- This question was therefore intended to evaluate trainees’ awareness of the range of beliefs that may underlie the practice rather than to suggest that FGM/C is mandated by religion [23, 24].

Regarding question 26, genital piercings are considered a form of FGM (type 4) however, regarding labiaplasty, there are various opinions in the literature. The WHO doesn’t include labiaplasty among FGM practices; however, there are publications that argue that labiaplasty should be treated together with FGM, having many aspects in common [25].

The question addressing urological complications was designed to assess participants’ awareness that women affected by FGM/C may experience multiple urinary and sexual health complications. Therefore, the option “all the answers” was considered correct, as several conditions—including recurrent urinary tract infections, lower urinary tract symptoms, infertility, fistula, and sexual dysfunction—have all been reported in association with FGM/C.

#### 4.4 Trainees’ opinions

60% of participants believe that FGM isn’t a big problem in their country. This differs from a study made in Guinea, where 94% of health professionals believe that FGM is a problem. If we consider the percentages of FGM among women in Guinea (95%) and in Italy (we calculated 0.003%, using as denominator the women resident in Italy on 1 January 2019 according to ISTAT (national institute of statistics) and as numerator the estimate of residents with FGM in Italy) we note that the perception of trainees can be justified by the low prevalence in Italy [26–28].

100% of participants believe that healthcare personnel should receive more training (70% identify speciality as the best time for training) and 86% believe that healthcare personnel have a fundamental role in eradicating FGM. This is justifiable by the data we analysed in Sect. 1, which demonstrate that throughout their career it is very likely for Gynaecologists to meet a woman with FGM. In fact, 63% of trainees have encountered a woman with FGM. From these variables it can be deduced that, although the phenomenon of FGM is low in Italy, healthcare personnel cannot exempt themselves from the duty to know these practices.

100% agree that FGM is a violation of human rights and 98% believe that there should be a law against it. This aligns with a study made in a low prevalence country [18]. However, it differs completely from studies in high prevalence countries where almost all health professionals think there shouldn't be a law against FGM [14, 29]. In high prevalence countries, opinions were profoundly divergent between professionals from rural and urban areas: in rural regions there is greater support for FGM compared to urban areas [10, 16, 17].

About question 35, in 2015 the General Assembly of the United Nations adopted "the 2030 Agenda for Sustainable Development"; in the 5th objective, in point 3 it is specified that all harmful practices must be eliminated, such as FGM [30]. In a 2020 study that consider the FGM phenomenon in 24 countries and the reduction over the years, it was found that objective 5.3 was out of reach if there hadn't been a worldwide radical change [31]. In another study, to achieve the elimination of FGM by 2030, progress must be made 15 times faster than the decline observed over the past 15 years [29].

It's worth to take into consideration that aspect that may influence responses to surveys addressing FGM/C is the cultural background of respondents. FGM/C is a practice deeply rooted in specific cultural and social contexts, and healthcare professionals who originate from communities where the practice exists may have different perspectives compared with those who encounter it only through education or clinical exposure. When questions about culturally embedded practices are asked to individuals who do not belong to those cultural contexts, responses may reflect a predominantly biomedical or human-rights perspective. Conversely, respondents who have cultural familiarity with the practice may interpret questions differently or may feel more directly concerned by the topic. Although our questionnaire did not specifically assess participants' cultural background, this factor may influence attitudes and perceptions regarding FGM/C and should be considered when interpreting the findings of the present study.

It should also be noted that several of the studies cited in the literature evaluated practicing healthcare professionals rather than trainees. Professionals with longer clinical experience may have had greater opportunities to encounter women affected by FGM/C and to receive additional training during their careers. Therefore, differences between our findings and those reported in previous studies may partly reflect the earlier stage of professional development of the trainees included in our study.

This study has several limitations that should be considered when interpreting the findings. First, the number of respondents was relatively small and the geographical distribution was uneven, as most participants were from Italy and Malta. Although the survey was intended to include trainees from multiple European countries, responses from other countries were not obtained, which limits the international representativeness of the results. In addition, differences in healthcare systems and clinical organization between countries may influence trainees' exposure to women with FGM/C and their access to specialized services or training opportunities. For example, in Malta maternity care is largely centralized in a single maternity unit, which may affect referral pathways and opportunities for specialized care compared with other European settings. Cultural and healthcare system differences between countries may therefore influence how trainees perceive and manage FGM/C.

## 5 Conclusion

This study highlights gaps in preparedness of Obstetrics and Gynecology trainees of European countries regarding FGM/C. While most trainees are aware and have encountered patients with FGM, there is a need for more structured and comprehensive education. The limited number of respondents who have attended formal training underscores the necessity of integrating FGM/C-related content into medical curricula and specialized training programs.

The participants' unanimous agreement that FGM/C is a violation of human rights reflect the ethical and legal imperative to address this issue. However, the mixed opinions on the possibility of eradicating FGM/C by 2030 suggest that more work is needed to eliminate the practice.

Future research should focus on larger multicenter studies including trainees from a wider range of countries in order to better assess differences in training, clinical exposure, and healthcare system organization. In addition, studies evaluating the impact of structured educational programs on FGM/C during medical school and specialty training could help identify the most effective strategies to improve healthcare professionals' preparedness in managing women affected by this practice.

## Appendix A: questionnaire presented to the trainees

### Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12982-026-02028-4>.

Supplementary Material 1.

### Author contributions

Alessandro Libretti: Conceptualization, Methodology, Formal Analysis, investigation, resources, data curation, writing—original draft preparation, writing—review and editing. Libera Troia: Conceptualization, Methodology, Formal Analysis, investigation, resources, data curation, writing—original draft preparation, writing—review and editing. Gabriele Bianco: Formal Analysis, investigation, writing—original draft preparation. Valentino Remorgida: Validation, supervision, project administration.

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### Data availability

Additional and unpublished data from the study are available upon request from the corresponding author. The datasets generated and/or analysed during the current study are not publicly available due to privacy reason but are available from the corresponding author on reasonable request.

## Declarations

### Ethics approval

The study protocol was approved by the *Intercompany Ethics Committee of the University Hospital "Maggiore della Carità" – BI Local Health Authority, NO Local Health Authority, VCO Local Health Authority*. (No. 753/CE-31/05/2023; No. CE022/2023). The research was conducted in accordance with the guidelines and regulations of the ethics committee that approved the study. All procedures involving human participants were conducted in accordance with institutional guidelines and the principles of the Declaration of Helsinki.

### Consent to participate

Informed consent to participate in the study was obtained from all individual participants included in the research.

### Consent for publication

Informed consent for publication of the study findings was obtained from all individual participants.

### Competing interests

The authors declare no competing interests.

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