

Access to and use of sexual and reproductive health services by adolescent girls in humanitarian crisis situation: The case of IDP sites in the City of Goma, Democratic Republic of the Congo

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ABSTRACT

Introduction

This study investigates the factors influencing access to and use of sexual and reproductive health (SRH) services by adolescent girls living in humanitarian situations within internally displaced persons (IDP) sites in the city of Goma. Goma is the most critically affected area, where conflicts are currently most frequently reported.

Purpose

The aim of this study is to identify and analyse the factors influencing access to and use of SRH services among adolescent girls living in IDP sites in Goma, with the goal of proposing appropriate and effective solutions to enhance their well-being.

Methods

This cross-sectional, analytical study involved 740 internally displaced adolescent girls. Quantitative data were collected using KoboCollect via a structured questionnaire. The data were analysed using descriptive statistics and logistic regression models.

Results

More than a quarter (26.5%) of the respondents had no formal education. The logistic regression results indicate that the factors most significantly influencing the use of SRH services are age (OR = 1.16, $p < 0.05$), marital status (OR = 1.735, particularly for married women), and the respondents' level of knowledge about SRH (OR = 1.2, $p < 0.02$).

Conclusion

Stigma, social restrictions, low levels of education, and limited financial resources are identified as major barriers to accessing and using SRH services. Integrated interventions are essential to enhance the utilisation of these vital services among women of childbearing age in general, and adolescent girls in particular.

INTRODUCTION

Goma is one of the provincial capital cities located in the eastern region of the Democratic Republic of the Congo (DRC), which has been experiencing a prolonged humanitarian crisis for nearly three decades. This crisis in eastern DRC is one of the most complex and long-lasting in the world, presenting unique challenges for internally displaced adolescent girls (Le Monde Afrique, 2024; UNHCR, 2023). During the period of this study, the city of Goma was home to more than 600,000 internally displaced persons (IDPs) (Le Monde Afrique, 2024; UNHCR, 2023).

Previous research on sexual and reproductive health (SRH) in humanitarian contexts is often limited and of varying quality, given the diverse nature of humanitarian situations worldwide (Hammad et al., 2023). Although each humanitarian crisis presents distinct challenges and realities, identifying the most pressing SRH needs enables health professionals to respond effectively, even in difficult circumstances. The success of interventions relies heavily on the accurate identification and planning of these needs (Safajou et al., 2023).

Providing SRH information to adolescent girls and women of reproductive age is essential, particularly during humanitarian crises, as these situations expose adolescent girls to heightened vulnerabilities. These include risks of contracting infections such as HIV and other sexually transmitted infections (STIs), experiencing unintended pregnancies, and facing unsafe deliveries (Bain et al., 2023).

In mid-2023, the United Nations High Commissioner for Refugees (UNHCR) reported that 110 million people had been forced to leave their habitual residences due to armed conflict, and this number continues to rise. This increase represents an estimated surplus of 1%, or 1.6 million people, compared to the 2022 figures (Bain et al., 2023; UNHCR, 2023).

Currently, the SRH of adolescent girls in humanitarian crises is receiving considerable attention worldwide due to the perceived inadequacy of existing data on the topic (Soeiro et al., 2023; Baroudi, 2023). The World Health Organization (WHO) defines adolescence as the period between the ages of 10 and 19, representing approximately 20% of the global population, with 85% residing in low-

and middle-income countries (Zepro et al., 2023; Crankshaw et al., 2024; Dine et al., 2023).

Despite the necessity for accessible SRH services in many developing countries, the expectations of intended users regarding quality are rarely assessed. Research indicates that adolescents are not typically involved in decision-making about the services that directly affect them, particularly in developing countries (Dine et al., 2023).

In humanitarian crisis situations, communities often have limited knowledge of SRH and restricted access to related services, leading to persistent challenges such as early and unintended pregnancies and prolonged exposure to STIs (Aibangbee et al., 2023). In the Middle East, for instance, the UNHCR reports that SRH issues among women and girls in Syrian refugee camps are particularly concerning. Lebanon, hosting the highest number of refugees per capita, struggles with inadequate social protection, xenophobia, and discrimination, which increase the risk of gender-based violence (Baroudi, 2023; Doherty et al., 2023; Fouad et al., 2023).

Similarly, in Iran, the unmet SRH needs of adolescent girls have been highlighted, particularly due to inadequate health facilities, insufficient services, and poor privacy conditions, particularly in emergency obstetric care (Safajou et al., 2023; Singh et al., 2023). In Latin America, Venezuelan migrants travelling to Colombia face obstacles to accessing SRH services, including a lack of information and instances of mistreatment (Brizuela et al., 2023).

West and Central Africa (WCA) have the world's highest rates of early marriage and teenage pregnancy, with significant disparities between countries. For instance, the teenage pregnancy rate is lowest in Senegal (16%) and highest in the Central African Republic (49%), while early marriage rates range from 6% in Ghana to 61% in Niger (Sagalova et al., 2021). As the African continent experiences significant migratory movements, there is a pressing need to address the vulnerabilities affecting young people, especially those from immigrant families (Crankshaw et al., 2024).

According to the UNHCR, the current humanitarian crisis in the eastern DRC, particularly in North Kivu Province, is one of seven global crises responsible for 90% of new

migration waves (Bain et al., 2023; UNHCR, 2023). These urgent situations necessitate emergency humanitarian assistance to mitigate present and future health risks (Bain et al., 2023).

At the local level, no research to date has systematically documented the risks faced by adolescent girls during the nearly three-decade-long humanitarian crisis in Goma. Adolescent girls residing in IDP sites in and around Goma continue to experience multiple SRH-related challenges, including inadequate healthcare access, community stigmatisation, insecurity, and a lack of sex education programmes. Addressing these issues requires an integrated support programme aimed at safeguarding the well-being of these vulnerable girls.

Based on the above context, the following research question emerges:

What are the factors influencing access to and use of SRH services among adolescent girls living in IDP sites in Goma?

As a preliminary response to this question, we hypothesise that the factors influencing access to and use of SRH services among adolescent girls in IDP sites in Goma are linked to socio-demographic characteristics, educational levels, and cultural and contextual factors.

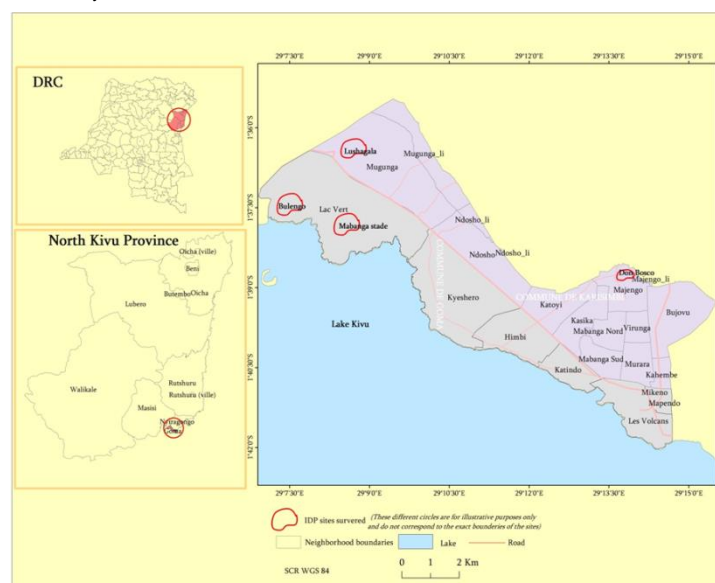
The primary objective of this research is to understand and analyse the factors that affect access to and use of SRH services among adolescent girls in IDP sites in Goma. The study aims to propose context-specific solutions to improve their well-being.

METHODS

Study Area

The study was conducted at the Don Bosco Ngangi, Lushagala, Bulengo, and Mabanga-Stade IDP sites, located in the communes of Goma and Karisimbi, within the city of Goma, the provincial capital of North Kivu. Goma currently hosts more than 600,000 internally displaced persons (IDPs) in the Democratic Republic of the Congo (Le Monde Afrique, 2024).

Figure 1:
IDP surveyed sites



Type and Period of the Study

This study is a cross-sectional quantitative investigation employing an analytical approach. It was conducted over a six-month period, from 30 April to 30 October 2024.

Population and Sample

Target Group and Selection Criteria

The study population consisted of 36,000 displaced adolescent girls aged 15 to 19 residing in IDP sites within the city of Goma. The participants were selected based on the following inclusion criteria: age between 15 and 19 years, ability to provide free and informed consent (for those aged 17 and above) or assent (for those under 18), comprehension of the study's nature, physical and mental health conducive to participation, and willingness to participate voluntarily.

Non-inclusion criteria encompassed being under 15 or over 19 years of age, inability to give free consent or assent, compromised mental health status, and refusal to participate voluntarily in the study.

Sampling and Size

Given the presence of six IDP sites in the city of Goma, the study employed multi-stage sampling to account for the cultural diversity within the target population. Initially, cluster sampling was used to group adolescent girls from each of the six sites, treating these sites as clusters. Four sites were then selected based on the observed diversity of

the displaced persons' places of origin. In the selected sites, the total number of surveyed adolescent girls was proportionally divided into strata according to the size of each site.

The sample size was calculated using Fisher's formula:

$$n = \frac{Z^2 \cdot p \cdot (1 - p)}{d^2}$$

For precision, the calculated sample size (384) was adjusted by a factor of 1.927, resulting in a final sample size of 740 adolescents, proportionally distributed among the four strata.

Data Collection and Analysis

Data were collected through a structured survey administered using the KoboCollect software. The questionnaire included socio-demographic variables, knowledge, attitudes towards SRH services, and their usage. Following data collection, the responses were analysed using descriptive statistics and logistic regression through SPSS v.23.0 to identify factors influencing the use of SRH services among adolescent girls.

Ethical Consideration

Ethical approval for this study was obtained from the Bioethics Committee (CBE) of the Higher Institute of Medical Techniques of Kinshasa, Kinshasa, Democratic Republic of the Congo. The study also received a letter of assignment for research placement (N/Réf. 040/ISTM/TC/OA/MN/2024), a research attestation (N°041/012/2024) from the coordination of the ISTM-Kinshasa doctoral school, and authorisation for data collection from the North Kivu provincial authority (N°01/2081/CAB/GP-NK/2024 of 28 August 2024).

Free and informed consent forms (for adolescent girls aged 18 and above) and assent forms (for parents or guardians of adolescent girls under 18) were provided to the participants. The purpose of the study and the participants' roles were clearly explained before obtaining their signatures or consent for participation. Participants were informed about the confidentiality and anonymity of their data and their right to withdraw from the study at any time without any consequences.

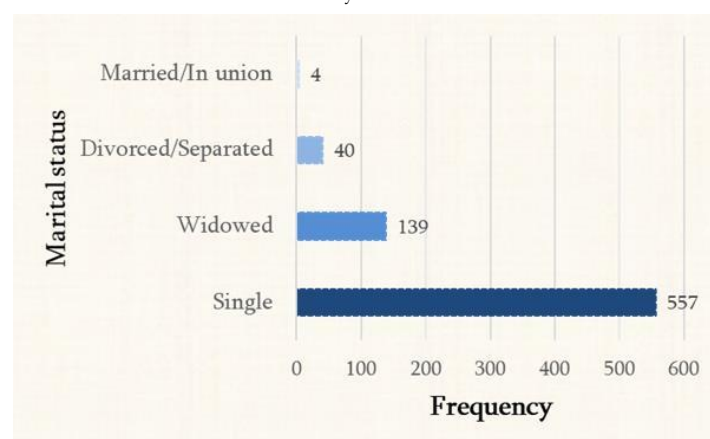
RESULTS

Table 1:
Socio-Demographic Characteristics of Adolescent Girls

Parameters	Average	Standard deviation
Age	≈17	1.644
Household size	≈7	2.676

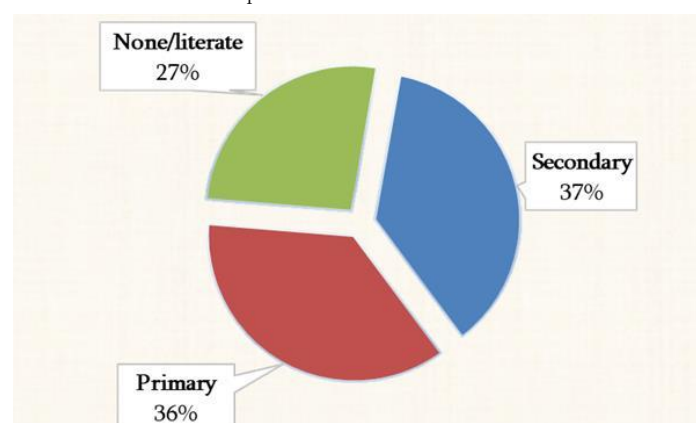
The results presented in **Table 1** indicate that the average age of the respondents was approximately 17 years (M = 17, SD = 1.66), while the average household size was around seven members (M = 7, SD = 2.68).

Figure 2:
Marital Status of Adolescent Girls Surveyed



The data presented in **Figure 2** reveal that the majority of the surveyed adolescent girls (75.3%) were single.

Figure 3:
Level of Education of Participants



According to **Figure 3**, 37% of the respondents reported having completed secondary education.

Figure 4:
Duration of Stay at the IDP Site



The findings illustrated in [Figure 4](#) show that more than half of the participants (51.1%) had been living on their respective sites for over a year.

Table 2:
Access to Sexual and Reproductive Health (SRH) Services

Parameters	Frequency	Percentage
To be informed of the existence of an SRH service		
Yes	440	59.5
No	300	40.5
Information sources		
Medical staff	326	74.1
Through posters or information panels	121	27.5
Other residents of the displacement site	23	5.2
Members of my family	16	3.6
Others	7	1.6

A summary of [Table 2](#) indicates that 59.5% of the participants were aware of the existence of SRH services. The primary sources of information were medical staff (74.1%) and posters or information boards (27.5%).

Table 3:
Use of Sexual and Reproductive Health Services

Parameters	Frequency	Percentage
Level of satisfaction of adolescents displaced to SRH services		
Strongly disagree or disagree	250	33.8
Neutral	109	14.7
Agree or strongly agree	381	51.5
If the displaced adolescent uses SRH services		
No	445	60.1
Yes	295	39.9
Services already used		
Medical consultation for contraception	36	12.2
Medical consultation for family planning	30	10.2
Screening for sexually transmitted infections (STIs)	182	61.7
Condom distribution	78	26.4
Other	7	2.4

As shown in [Table 3](#), 60.1% of respondents reported not using SRH services. Among those who accessed the

services, the most frequently used were STI screening (61.7%) and condom distribution (26.4%). Additionally, 51.5% of the respondents expressed satisfaction with the available SRH services.

Table 4:
Knowledge and Attitudes of Adolescent Girls

Parameters	Frequency	Percentage
Willingness to discuss SRH issues with healthcare professionals		
Strongly disagree or disagree	135	18.3
Neutral	77	10.4
Agree or strongly agree	528	71.3
Level of knowledge about SSR		
Very low or low	369	49.9
Average	158	21.3
Good to very good	213	29.8
Importance of access to SSR services		
Not at all important to not important	32	4.3
Neutral	37	5
Important or extremely important	671	90.7

The majority of respondents (71.3%) agreed or strongly agreed that discussing SRH issues with healthcare professionals is important. Almost half (49.9%) indicated a very low or low level of SRH knowledge, while 90.7% considered access to SRH services to be important or extremely important.

Table 5:
Association Between Socio-Demographic Factors and Use of SRH Services

Parameters	Odds ratio	p-value	Decision
Age			
Household size	≈1.16	0.004813	DTS (**)
Marital status	≈1.034	0.263841	DNS
Married~Single	≈1.735	0.011313	DTS (**)
Divorced/Separated~Single	≈1.535	0.206031	DNS
Overall effect		0.006275	
Study level			
Primary~without level	≈0.67	0.044875	DS (*)
Secondary~without level	≈0.79	0.249624	DNS
Overall effect		0.133569	
Time on site	≈ 1.17	0.242518	DNS

Age (OR = 1.16, $p < 0.02$) and marital status (OR = 1.735, $p < 0.02$) had a significant influence on the use of SRH services. Primary education, compared to no education, also showed a significant influence (OR = 0.67, $p < 0.05$).

Table 6:
Factors Influencing Access, Knowledge, and Attitude Towards SRH Services

Parameters	Odds ratio	p-value	Decision
Level of satisfaction of displaced adolescents with available SRH services	1.975 ≈ 2	0.000000	DTS (**)
Level of knowledge about SRH	1.200784876	0.019542	DTS (**)
Willingness to discuss SRH issues	1.379065212	0.000607	DTS (**)
Importance of access to SRH services	1.119570177	0.367490	DNS
Being informed of the existence of sexual and reproductive health services	0.1389179	0.000000	DTS (**)

Satisfaction with available SRH services significantly increased the likelihood of their use (OR = 1.97, p = 0.0000). Similarly, knowledge about SRH (OR = 1.20, p = 0.0195), willingness to discuss SRH (OR = 1.37, p = 0.0006), and being informed about SRH services (OR = 1.13, p = 0.0000) significantly increased the use of these services.

DISCUSSION

Socio-demographic characteristics

The results of this research indicate that the average age of the adolescent girls surveyed was approximately 17 years. The majority of respondents were single (75.5%), and only 18.8% were married. These findings are consistent with another study on the use of sexual and reproductive health (SRH) services among adolescents, where the average age was reported as 17.71 (Abdurahman et al., 2022). The similarity in age ranges between the two studies suggests a proportional relationship. However, this age falls well within the typical range for teenage girls in this study.

The adolescent girls surveyed came from families with an average size of seven members, and more than half (51.1%) had been living in internally displaced persons (IDP) sites for over a year. In terms of education, more than a quarter (26.5%) of the respondents were illiterate. This environment is likely to exacerbate vulnerability and inequalities in access to SRH services due to factors such as lack of autonomy stemming from age and overcrowding (Makenzius et al., 2019).

The socio-demographic characteristics presented in Table 1 and Figures 2, 3, and 4 align with the study’s first objective: to determine the socio-demographic characteristics observed among war-displaced adolescent girls living in sites in

the city of Goma that influence access to and use of SRH services.

Knowledge, access, and use of SRH services

Among the 740 adolescent girls surveyed, more than half (59.5%) were aware of the availability of SRH services in their communities. The primary sources of information were healthcare providers (74.5%) and posters or information boards (27.5%). However, only 39.9% had actually used SRH services. Contrary to these findings, a recent study conducted in the town of Kéta, Ghana, reported that 84.24% of adolescent girls had both access to and experience using SRH services (Akakpo et al., 2024). Conversely, other studies reported low utilisation rates of SRH services among adolescents, with uptake rates of 23.5% and 33.8%, respectively (Abdurahman et al., 2022; Haile et al., 2020). This discrepancy poses a challenge to achieving Sustainable Development Goal (SDG) 3.7, which aims to ensure universal access to SRH services (United Nations, 2024).

Although more than half (51.5%) of respondents expressed satisfaction with available SRH services—particularly those related to STI screening (61.7%) and condom distribution (26.4%)—the gap between awareness and actual use of these services is concerning. This issue, also highlighted in studies conducted in a refugee camp in Chad, indicates that prevention needs, including STIs and unintended pregnancies, should be prioritised (Casey et al., 2024; Ivanova et al., 2019).

Research indicates that poor perceptions of healthcare services negatively impact their adoption and use, regardless of awareness levels (Orok et al., 2024). The high dissatisfaction rate (33.8%) observed among respondents underscores the challenge of utilising SRH services in humanitarian contexts. This finding suggests that adolescent girls in such settings face socio-cultural and psychological barriers that hinder their autonomy and decision-making regarding health. Therefore, improving access to quality SRH services requires culturally sensitive interventions.

Compared to previous studies, it is evident that the level of knowledge among these adolescent girls regarding SRH services significantly affects their utilisation. This aligns with the second objective of this study, which is to assess

the impact of knowledge on the effective use of SRH services.

Factors influencing the use of SRH services

Based on the analysis presented in [Table 5](#), age and marital status significantly influence the use of SRH services, with odds ratios of 1.16 and 1.735, respectively ($p < 0.02$). These findings are in line with research conducted in the Nakivale camp in Uganda, which found that older adolescent girls (17 to 19 years) were more likely to use SRH services than younger girls ([Ivanova et al., 2019](#)). This may be attributed to the increased need for reproductive health services to mitigate the risks of early and unintended pregnancies.

Additionally, although divorced or separated adolescents also showed a higher probability of using SRH services (OR = 1.535), this result was not statistically significant, likely due to social stigmatization within their communities. Furthermore, adolescent girls with primary education had a lower likelihood of accessing SRH services (OR = 0.67, $p < 0.05$), while secondary education showed no significant difference when compared to illiterate girls. Similar findings were reported in a study from the Bidibidi refugee camp in Uganda, where respondents with no formal education exhibited limited access to SRH services ([Bukuluki et al., 2021](#)).

Family size and duration of stay at the IDP site did not significantly affect SRH service use (OR = 1.16 and 1.17, respectively), contrasting with findings from a Kenyan study that linked overcrowding to restricted freedom in using SRH services ([Makenzius et al., 2019](#)).

According to [Table 4](#), satisfaction with SRH services significantly increased the likelihood of use, almost doubling it (OR = 1.97, $p = 0.000$). Good knowledge of SRH (OR = 1.2) and awareness of service availability also positively influenced utilisation ($p < 0.0001$). However, barriers such as insufficient information, low knowledge of appropriate SRH use, and socio-cultural restrictions continue to limit access ([Amiri et al., 2020](#); [Davidson et al., 2022](#); [Varelis et al., 2024](#)).

The willingness of respondents to discuss SRH-related issues significantly increased the likelihood of using these services ($p < 0.001$). Despite this willingness, restrictive

cultural norms and psychological barriers remain major obstacles ([Hall et al., 2018](#); [Rehnström Loi et al., n.d.](#)). Addressing these challenges requires community engagement through media and local leader involvement, fostering adolescent girls' autonomy in health decisions ([Aliyu & Aransiola, 2023](#)).

Socio-cultural barriers remain pivotal in restricting access to healthcare services at IDP sites. Key obstacles include disease-related stigmatization, cultural beliefs opposing modern treatments, and the substantial influence of community leaders. These findings demonstrate how entrenched local values can hinder healthcare uptake.

Finally, a key limitation of this study is the lack of qualitative data collection. The absence of personal narratives and testimonials limits the ability to fully understand the psychological and contextual factors influencing service dissatisfaction. Future research should adopt a qualitative approach to gain deeper insights and guide targeted interventions.

In conclusion, the results underscore the importance of culturally responsive interventions by humanitarian organisations to address the specific challenges faced by internally displaced adolescent girls. The findings are consistent with prior research advocating for a participatory approach involving local community leaders and key stakeholders to improve SRH service access and acceptance.

CONCLUSION AND RECOMMENDATIONS

In conclusion, based on the results of the logistic regression analysis, age (OR = 1.16, $p < 0.05$), marital status (OR = 1.735, particularly for married women), and the respondents' level of knowledge about sexual and reproductive health (SRH) (OR = 1.2, $p < 0.02$) are the key factors influencing the use of SRH services among war-displaced adolescent girls.

However, it should be noted that a significant proportion of adolescent girls do not utilise the available SRH services in IDP sites. This is primarily due to a combination of socio-cultural, educational, and environmental barriers, which persist even when moderate awareness-raising efforts are in place. Furthermore, the quality of these services remains a significant challenge.

The study also highlights systemic barriers such as stigma, social restrictions, low levels of education, and limited financial resources, which collectively hinder the utilisation of SRH services, despite their availability.

This study identifies two main categories of barriers to accessing healthcare services for adolescent girls in humanitarian crises:

Socio-cultural barriers: These encompass cultural beliefs and stigma that restrict the use of SRH services.

Insufficient information: This limitation affects the level of knowledge among some participants regarding the available or offered services.

Recommendations

In light of these findings, we propose the following actions:

a) For community leaders, religious representatives, community organisations, and/or local community representatives:

- Develop clear, precise, and locally adapted messages through posters, community radios, and social networks.
- Establish performance indicators to evaluate interventions and adapt strategies to align with the needs and preferences of the target populations.

b) For the Ministry of Health, NGOs working in French-speaking regions, other local authorities, and health professionals:

- Deploy mobile clinics to occupied regions to ensure immediate access to healthcare services.
- Train local health workers in modern, technology-based healthcare techniques.

c) For future researchers:

- Initiate qualitative studies to complement the current findings and provide a more nuanced understanding of the barriers to SRH service utilisation.

Ethical Approval: Ethical approval for this study was obtained from the Bioethics Committee (CBE) of the Higher Institute of Medical Techniques of Kinshasa, Kinshasa, Democratic Republic of the Congo. The study also received a letter of assignment for research placement (N/Réf. 040/ISTM/TC/OA/MN/2024), a research attestation (N°041/012/2024)

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Conflicts of Interest: None declared.

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