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Sexual and Reproductive Health of Adolescent Refugee Girls and Young Women in Lebanon

vorgelegt von:

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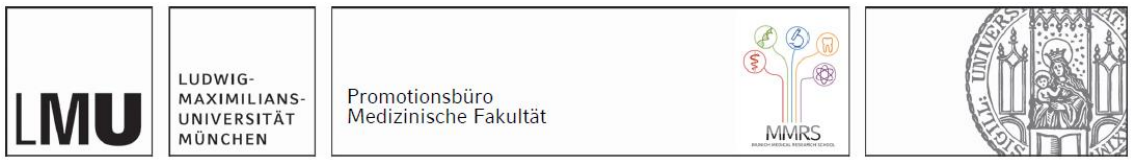

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List of abbreviations

ASRHR: Adolescent sexual and reproductive health and rights

EMENA: Extended Middle East and North Africa

FGD: Focus group discussion

IAFM: Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings

IAWG: Inter-Agency Working Group on Reproductive Health in Crises

ICPD: International Conference on Population and Development

IQR: Interquartile range

IUD: Intrauterine device

MHM: Menstruation hygiene management

MoU: Memorandum of Understanding

SDG: Sustainable development goal

SGBV: Sexual and gender-based violence

SMEB: Survival minimum expenditure basket

SRH: Sexual and reproductive health

STI: Sexually transmitted infection

UNFPA: United Nations Population Fund

List of publications

Paper I:

Korri, R., Hess, S., Froeschl, G., & Ivanova, O. (2021). Sexual and reproductive health of Syrian refugee adolescent girls: A qualitative study using focus group discussions in an urban setting in Lebanon. Reproductive Health, 18(1), 130. https://doi.org/10.1186/s12978-021-01178-9

Paper II:

Korri, R., Froeschl, G., & Ivanova, O. (2021). A Cross-Sectional Quantitative Study on Sexual and Reproductive Health Knowledge and Access to Services of Arab and Kurdish Syrian Refugee Young Women Living in an Urban Setting in Lebanon. International Journal of Environmental Research and Public Health, 18(18). https://doi.org/10.3390/ijerph18189586

Contribution to the publications

1.1 Contribution to paper I

As a PhD student, I was the main responsible of conceptualizing and designing the qualitative research. This included definition of the specific study objectives, selection of the research method, and generation of the semi-structured Focus Group Discussion (FGD) guide with definite themes, in English and Arabic. Dr. med. Olena Ivanova and Dr. med. Günter Fröschl supported me in that procedure by providing constructive feedbacks and recommendations. Before starting data collection, I composed the research protocol which I submitted with other required documents to the appropriate Lebanese and German Institutional Review Boards. According to that, the research project obtained ethical approvals from the Institutional Review Boards of Rafik Hariri University Hospital in Lebanon and the Faculty of Medicine at Ludwig-Maximilians-Universität in Munich, Germany.

I entirely performed the data collection for paper I between January and March 2020. However, and before starting the employment of FGDs, I spent three months in Bourj Hammoud from July to September 2019, where I was able to learn about the research setting and its particularity, identify the female gatekeepers of the urban area, and develop trusting relationships with the region's actors and residents. Afterwards, I organized my field network and developed the working plan for data collection. Dr. med. Ivanova and Dr. med. Fröschl supervised the process of data collection through regular emails, reports, and online meetings. With the help of the community gatekeepers, I arranged the logistical and organisational matters related to data collection such as taking the permission of the head of the household to conduct the FGD in his or her apartment, explaining study's goals and relevance to participants as well as their parents or caregivers, drafting the Arabic written assent and consent forms, assuring the receipt of oral or written Arabic assent of participating girls and consent of parents or caregiver, and providing refreshments and incentives. I was responsible for audio recording the FGDs, transcribing them verbatim and translating them into English. Additionally, I took field notes after every FGD, which I referred to during the data analysis. In order to maintain confidentiality, I replaced the participant names in the Arabic and English versions of transcripts with participants' identification numbers. I performed a descriptive data analysis using thematic analysis. On that ground, I generated a codebook of pre-defined and new themes in addition to a schematic representation for that. Prof. Dr. Sabine Hess offered guidance for the analysis when needed. Dr. Elmar Saathoff provided the required administrative support to the project.

I drafted the different parts of the manuscript with contributions from Dr. med. Ivanova, Dr. med. Fröschl, and Prof. Dr. Hess. I was responsible of submitting the manuscript to the *BMC Reproductive Health* journal and address the reviewers' comments through different rounds of major and minor revisions. The latter step was done with the supervision of the co-authors, when necessary.

1.2 Contribution to paper II

I was the main researcher and first author of paper II. As a Lebanese female doctoral researcher and an Arabic native speaker who is well informed about the research background and framework, I was in

charge of developing and planning the quantitative research. That involved study objectives definition, the questionnaire's five parts formation in English based on the validated tools, and its translation into Arabic. That process what supervised by Dr. med. Olena Ivanova and Dr. med. Günter Fröschl. Furthermore, I applied for ethical approvals from a Lebanese and another German ethical committee: Institutional Review Boards of Rafik Hariri University Hospital and the Faculty of Medicine at Ludwig-Maximilians-Universität. After receiving positive ethical votes from both committees, fieldwork and data collection could be started.

Between July and September 2019 and before starting data collection, I carried out the first phase of fieldwork through which I learned about Bourj Hammoud's specific context, met and created reliable connections with local actors and inhabitants, and recognized Syrian female community gatekeepers in the area. Additionally, I programmed the questionnaire in the Magpi® application and piloted it using a tablet computer. At the end of this phase, I was engaged in different rounds of discussion with Dr. med. Ivanova and Dr. med. Fröschl for the purpose of receiving feedback and planning the process of data collection.

I conducted the data collection of paper II between January and March 2020 and assigned five different snowball starting points to five Syrian female gatekeepers in Bourj Hammoud. As a mean to prevent the formation of a homogenous sample and improve representation, I followed up with the gatekeepers on the process of participants recruitment and allowed only a certain number of participants from each chain. As a result, I was able to enrol 305 Syrian refugee young women, from whom I collected data in a one-on-one private environment, either in the participants' or in the gatekeepers' apartments. In order to be able to use the available space in their apartments, I got the approval of the heads of the households. Before starting data collection, I clarified the study's objectives and importance to every participating Syrian refugee young woman and received her consent to participate in oral and written forms. Thus, I drafted the Arabic consent form. I performed data collection in an off-line mode; however, the filled questionnaires were automatically uploaded to the database once the computer tablet was again connected to the internet. The questionnaires to which I assigned identification numbers instead of the participant names, were extracted in Excel format on a daily basis. At the end of data collection, I arranged the incentives that were received by all participants. I explored the data through descriptive analysis, using BM SPSS Statistics version 27.0. All variables were descriptively represented through the appropriate values. I also ran tests of associations for categorical variables. Online reporting on the data collection and analysis was regularly submitted to Dr. med. Ivanova and Dr. med. Fröschl, who always offered advice and support. Dr. Elmar Saathoff gave the administrative assistance needed during the research.

I was in charge of submitting the manuscript to the *MDPI International Journal of Environmental Research and Public Health* and revising its following versions based on the reviewers' minor and major comments. Dr. med. Ivanova and Dr. med. Fröschl provided directions to that, when needed.

2. Introductory summary

2.1 Background

During the last two decades, the worldwide number of refugees and asylum seekers who were forced to migrate over national borders drastically increased from 17 million in 2000 to 34 million in 2020 (1). Nearly half of them are girls and women who may suffer from amplified vulnerability and may be subjected to human rights violations (2, 3). In the year 2021, one-quarter of the worldwide refugees come from the Syrian Arabic Republic, with the majority being hosted in urban areas of neighboring countries such as Jordan, Lebanon, Iraq, Turkey, and various North African countries. Lebanon is the host country with the world's highest number of refugees per capita (4–6). According to the Memorandum of Understanding (MoU) signed with UNHCR in 2003, Lebanon is a country of transit and not of asylum, which gives the Lebanese government authorization over refugees' legal status and consequently their ability to access legal work, education and healthcare (7–9). In 2020, 80% of Syrian refugees did not have legal residency, whereas 89% lived below the survival minimum expenditure basket (SMEB) determined in Lebanon (10).

The Lebanese healthcare system, which was considered inequitable, stretched and notably privatized, even before the commencement of the armed conflict in Syria, became further constrained upon the influx of Syrian refugees in the country due to the steep demand for healthcare services (11–13). Considering that the scope of the system already had to address the needs of vulnerable Lebanese and preceding refugee populations primarily comprising of Palestinian refugees, who arrived to Lebanon in 1948 and 1967 on one hand, and additionally cover the ones of Lebanese citizens that returned from Syria and Palestinian refugees that forcibly left their settlements in Syria on another hand, Syrian refugees consequently found themselves remaining only with limited, unsatisfactory and difficult to access health services (11, 13, 14). Moreover, Lebanon is encountering multiple complex crises since October 2019, including economic meltdown, political instability, the COVID-19 pandemic and the Beirut Port explosion on the 4th of August 2020 (15). These crises are not only enhancing the precariousness of Syrian refugees, but also deteriorating their health conditions since they are facing supplementary financial challenges to access adequate health services (15, 16). Accordingly, the vulnerable populations living in Lebanon, Lebanese and non-Lebanese, are compelled to prioritize the essential needs of their families, such as nutrition and housing over their personal health needs generally and sexual and reproductive health (SRH) needs, particularly (17).

In a time of humanitarian crises, adolescent girls and women undergo further difficulties and challenges, which influence their health and cause its deterioration (18, 19). They also become more vulnerable to poor SRH outcomes like unwanted pregnancy, maternal death, sexually transmitted infections (STIs), child marriage, and sexual and gender-based violence (SGBV) (20–22). Three out of five global maternal deaths take place in emergency contexts (23). In case of urban settings, refugee adolescent girls and women experience unmet SRH needs for different causes such as constrained funds, logistical difficulties, absence of privacy and confidentiality, and social considerations on the sensitive topic of SRH (24).

In 2013 and according to a situation analysis performed in Lebanon by the United Nations Population Fund (UNFPA) on youths affected by the Syrian crisis, participants had insufficient information on various

SRH issues, such as menstruation and contraceptive methods. The majority of the respondents (85%) were not able to specify the possibility of conception during a menstrual cycle, whereas less than half of them (45%) self-declared knowledge on contraceptive methods, with withdrawal being one of these methods (25). Syrian adolescent girls displaced to Lebanon experience feelings of loneliness, unsafety and anxiety of being subjected to sexual harassment and different types of violence, including child marriage (26, 27). Furthermore, Syrian refugee women face numerous obstacles when accessing SRH services in Lebanon, such as high cost, unavailability of female healthcare providers, judgemental approach of providers and inadequate delivery of services (28–30).

SRH of girls and young women is overlooked in research due to the sensitivity of the topic and the requirement to conduct related studies according to particular ethical standards. In humanitarian settings, water, shelter and nutrition are some of the life-saving elements that are prioritised over SRH (31, 32). Nevertheless, during the past few years, research on refugee adolescent girls and young women started to develop. Data that is being presented through research equips the humanitarian sector with inputs on the unique SRH concerns, experiences and needs of this target group, which encounters a particular vulnerability during humanitarian crises (26).

When looking for knowledge on the living situation and experiences of refugees inhabiting urban settings, this knowledge is found to be scarce despite the fact that more than 60% of world-wide refugees settle in such settings (33). Refugee women and girls inhabiting urban settings often experience poor SRH outcomes due to different reasons such as the lack of funding to provide the needed services, the logistical challenges when accessing those services, and the absence of privacy and confidentiality when delivering them (34). Most of Syrian refugees displaced to Lebanon live in urban settings that are overcrowded and in poor condition (35). Some studies on the SRH status of Syrian adult women in Lebanon have been conducted, but a very limited number has investigated the SRH of Syrian adolescent girls and young women living in Lebanese urban contexts (28, 30, 36).

2.2 Study objectives

The overall aim of this cross-sectional study was to assess and describe the SRH status of Arab and Kurdish Syrian refugee adolescent girls and young women living in Bourj Hammoud, an urban setting in Lebanon. The specific objectives of this exploratory study were divided into two main categories:

1. To determine the SRH perceptions and experiences of adolescent refugee girls aged 13 to 17 years through qualitative research. The findings of this part of the study were published in paper I (37).
2. To assess the SRH knowledge and access to services of young refugee women aged 18 to 30 years through quantitative research. The results of this part of the study were published in paper II (38).

2.3 Rationale of the study

Our research, which was conducted from April 2018 until November 2021, is of high relevance given especially that only a very limited number of studies exclusively investigate the SRH of adolescent refugee girls and young women living in a Lebanese urban setting (24, 26), which makes them a particularly hidden and neglected target group. The study's results highlight relevant aspects of the female refugees' SRH such as their perceptions, experiences, knowledge, practices, concerns, and access to services. The main aim of this study, its specific objectives, findings, and results are in accordance with the Sustainable Development Goals (SDGs) Three – *"ensure healthy lives and promote well-being for all at all ages"* – and Five – "*achieve gender equality and empower all women and girls"* (39).

Our exploratory study will assist governmental and non-governmental organizations working with refugees' SRH on national and international levels to better understanding refugees' different perspectives and challenges, and help these organizations develop their efforts accordingly. This study emphasizes the pressing necessity to ameliorate the SRH of refugee populations as well as their maternal and child health. Furthermore, it underlines the importance of advocating for SRH through developing, directing, and implementing the relevant activities and programs within refugee communities. Since 2019, Lebanon has continued to experience various interconnected and critical political, economic, and health crises, which add to the deterioration of the SRH status of Syrian refugee girls and young women to a degree that is alarming. Therefore, it is essential and significant to present the state of the different aspects of Syrian refugee girls and young women's SRH.

2.4 Methods

2.4.1 Study's setting and framework

The study was performed in Bourj Hammoud, an industrial area located in north-east Beirut, which since the 1920s has hosted refugees displaced by conflicts such as the Armenian Genocide and oppression by the Ottomans (40). The suburb is one of the most over-populated regions in the Middle East and the majority of people living there have a lower socio-economic status. Residents of this suburb include Iraqi, Palestinian, and Syrian refugees together with Lebanese citizens and migrant workers from various African and Asian countries (41, 42). As of 2021, it is estimated that 8141 Syrian refugees inhabit Bourj Hammoud (43). The framework of this study is based on the fundamentals and objectives of the Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings (IAFM) by the Inter-Agency Working Group on Reproductive Health in Crises (IAWG), its Adolescent Sexual and Reproductive Health Toolkit for Humanitarian settings, and the International Conference on Population and Development (ICPD) (20, 44, 45). A mixed-methods design of one qualitative and another quantitative research components was used for data collection, which was conducted between January and March 2020.

2.4.2 Part one – Qualitative research

In the first part of the study, we applied a qualitative research approach, where eight Focus Group Discussions (FGDs) were conducted with a total of 40 participants, with each FGD formed of five participants.

We utilized a semi-structured guide consisting of questions on definite themes in order to allow comparison across the FGDs and to centre the discussions around the following themes: menstruation, puberty, SRH awareness, and sexual harassment. We based the selection of themes and generation of the guide on the validated tool by the United Nations Population Fund (UNFPA) and Save the Children: Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings (46).

We employed purposive sampling to include unmarried and married adolescent Syrian girls, having the age between 13 and 17 years, belonging to Kurdish and Arab ethnic groups, and coming from different Syrian governorates. Three Syrian female gatekeepers with different demographic and socio-economic characteristics recruited the participants, which assured a better involvement of the target group in the research. The final sample size of the qualitative study was decided on the basis of data saturation, a stage where no new insights are further developed or provided (47, 48). In that case, the researcher stopped the process of data collection and shifted to data analysis. The FGDs were conducted in private rooms either in one of the gatekeepers' or participants' apartments, given that such a setting could be accessed by all participants without difficulty and viewed by their parents and caregivers as a safe and confidential space. At the beginning of each FGD, which lasted between 45 and 75 minutes, the lead researcher asked the participants about demographic particulars followed by a guided discussion on the various pre-defined themes. Participants could include new topics during the discussion, until data saturation was reached. The FGDs took place in a constructive environment created by the researcher, which promoted and motivated dynamic group interaction.

The data was analysed descriptively by applying thematic analysis (49, 50). A codebook of themes and sub-themes was pre-determined in accordance with the analysis from the study's frameworks, the FGD semi-structured guide, and the present literature on Adolescent Sexual and Reproductive Health and Rights (ASRHR) in crises worldwide.

2.4.3 Part two – Quantitative research

In the second part of the study, we conducted a cross-sectional survey with 297 Syrian refugee young women. The questionnaire had five parts: demographic characteristics, displacement characteristics, individual agency in displacement, SRH knowledge, experiences in accessing SRH services, and experiences of pregnancy. The questionnaire's various sections were defined and generated in reference to two validated tools: the Reproductive Health Assessment Toolkit for Conflict-Affected Women, CDC, 2007, and the Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings, UNFPA and Save the Children, 2009 (46, 51). The questionnaire was developed in English and then translated into Arabic. The questionnaire was also piloted ahead of data collection.

Snowball sampling was applied, since it allows the inclusion of hard-to-reach groups such as particularly vulnerable refugees (52, 53). The sample size was calculated according to Cochran's (1963) formula for cross-sectional studies (54). Five Syrian female community gatekeepers created five different snowball starting points. To improve representation and prevent the formation of a homogenous sample, the chosen gatekeepers had different demographic and socio-economic attributes and only a certain number of respondents were permitted for each of the resulting chains (55). Arab and Kurdish women with Syrian nationality, aged between 18 and 30 years, who had arrived in Lebanon after 15 March 2011 – the date

armed conflict began in Syria – were included in the study. Data collection was performed in a one-to-one private setting using a tablet computer and the Magpi® application, a questionnaire programming tool.

The data was descriptively analysed using IBM SPSS Statistics version 27.0. (International Business Machines Corporation, New York, USA). Continuous variables with non-normal distribution were characterized by their median and interquartile range (IQR). For categorical variables, associations tests were done applying Fisher's exact test due to the relatively small sample size of the study and its subsequent effect on the size of cells (56, 57). In order to determine significant differences among proportions within the categories of SRH services, chi-squared tests were applied. A significance threshold of 0.05 was used for the tests. For the purpose of estimating the general knowledge of each participant on SRH topics, we calculated an unweighted score in accordance with the participant's knowledge on the following four issues: STIs, symptoms of STIs, methods of contraception, and danger signs of pregnancy (58).

2.4.4 Ethical approvals and considerations

Before starting the field work, ethical approvals were received from the Institutional Review Boards of the Faculty of Medicine at Ludwig-Maximilians-Universität in Munich, Germany (Project Nr. 19-552), and Rafik Hariri University Hospital in Lebanon, based on the recommendation of the Lebanese Ministry of Public Health. Prior to data collection, the researcher explained to participants for both parts of the study – qualitative and quantitative – the objectives of the research project, its significance, as well as their right to withdraw their participation at any point. In the case of the qualitative research, in which minor girls participated, the researcher also clarified the above points to parents or caregivers. Receiving written Arabic informed assent from the girls in addition to written Arabic informed consent from their parents or caregivers was a prerequisite to their participation in the study. In the case of the quantitative research, written Arabic informed consent was obtained from all participating young women. In both parts of the study, oral Arabic informed consent was acquired from illiterate adults – participants or parents/caregivers – in the presence of a witness.

2.5 Findings

In this section, the main findings of the qualitative and quantitative research are briefly summarized. A detailed representation is provided in papers I and II (37, 38).

2.5.1 Syrian adolescent refugee girls' SRH perceptions, experiences, knowledge, practices, and concerns

Based on the qualitative study, six major themes emerged during the eight FGDs: 1) understanding adolescent girls' good health; 2) menstruation experiences and management; 3) perceptions of puberty; 4) knowledge about the female reproductive system; 5) the need for accurate information on SRH topics; 6) sexual harassment experiences and handling mechanisms (37).

2.5.1.1 Understanding adolescent girls' good health

SRH was a new term to all participants, which they could neither define nor elaborate on. Thus, they were asked instead about their insights into adolescent girls' broad health. They determined six components of health: healthy activities, hygienic habits, absence of diseases, nutritious diet, good emotional health status and self-protection.

2.5.1.2 Menstruation experiences and management

When discussing the theme of menstruation experiences and management, the theme the girls most actively engaged with, five sub-themes emerged: 1) first menstruation experiences; 2) knowledge about the menstrual cycle and sources of information; 3) menstruation hygiene management (MHM); 4) adapted routines during menstruation; and 5) social, psychological, and physical experiences.

Most of the girls did not have any awareness of menstruation before menarche, which left them with disruptive and intimidating experiences. Hiding their first menstruation from their parents due to feelings of discomfort and shame, and difficulties when using disposable pads for the first time because of lack of instructions were some of these experiences.

Girls mostly approached mothers, female relatives, female schoolmates and teachers for information and consultation on menstruation. A very limited number of participants obtained knowledge on this topic through communal activities delivered by a local NGO or scouts. YouTube videos and the mosque were also sources of information on the menstrual cycle for two of the adolescent girls. Only half of the FGD participants could explain the cause of menstruation. They considered it as an indicator of puberty, personal maturity, hormonal development, and transfer from girlhood to womanhood. They also explained menstruation as a means of eliminating the toxic blood from their bodies and hindering sickness. Only one of the 40 participating girls knew how to track the menstrual cycle with its three different phases and time intervals. The participants revealed several myths about helpful and disadvantageous habits during menstruation, such as consumption of hot and cold drinks respectively. One of the girls also talked about being banned from painkillers and additional drinking water, because of the belief that it would cause infertility and ovarian cysts.

All girls were using disposable pads, which they bought from local shops out of their parents' income or their own savings for a cost that varied between $1.- and $2.5- per package. They reported needing one to three packages of disposable pads per month and some of them could only afford to change their pads from one to three times per day. Although pads were available for what the participants considered a cheap price, they still criticized the low quality of accessible pads. The girls characterized their usage of pads as undesirable, hurtful and annoying. For the majority of participants, their mothers were in charge of buying their pads. For the only married participant from the FGDs, her husband was responsible for buying her pads. Most of the participating girls favored asking a family member to buy pads for them instead of going themselves to stores where sellers were men. This allowed them to avert social stigma and shyness associated with buying pads.

The participants shared their specially adapted routines during menstruation. Wearing long and dark colored clothes in order to avoid the worry caused by period staining; staying home to repose when suffering

from acute pain and have easy access to a bathroom; and being prohibited from household chores and carrying heavy objects are some of these routines. Additionally, the girls talked about the monthly habits they practiced due to hygienic and religious concerns, such as body and pubic hair removal just before or after menstruation and having an additional shower after the end of menstrual bleeding.

All FGD participants spoke about negative physical, psychological and social experiences when discussing menstruation. They found it a painful physical experience accompanied by feelings of loneliness, discomfort, anxiety, embarrassment, and nervousness. They also elaborated on the social stigma of menstruation, which is seen as a shameful and indecent issue in their community. This increased their concern of going out when having menstrual bleeding due to the risk of staining, which would expose them to gossip and intimidation. Only one of the girls disagreed with the others since she believed that menstruation is a natural process that happens to all girls, and thus should not cause distress.

2.5.1.3 Perceptions of puberty

Most of the participating girls could identify puberty by describing the resulting physical, personal, and social transitions. When discussing the physical changes caused by puberty, the adolescent girls spoke about the distressful and repulsive experiences accompanying that phase such as bullying, notably from male schoolmates. The FGD participants explained puberty as a point at which girls must abandon their girlhood in order to become mature individuals who can recognize and take responsibilities. Some adolescents associated puberty with the necessity to take precautions against sexual harassment and other people's behavior towards them.

When elaborating on the social considerations related to puberty, the girls criticized the unexpected "social surveillance" they were subjected to and their parents' new considerations regarding what is deemed to be "proper clothing" and "good behavior". Furthermore, the participating girls indicated the social connection of puberty with preparedness for marriage. All these new social factors caused the adolescent girls to feel unhappy. Their unhappiness was further exacerbated by the fact they felt they were being viewed as adults when they still wished to experience their childhood.

2.5.1.4 Knowledge about the female reproductive system

The majority of the adolescent girls demonstrated inadequate knowledge about the female reproductive system. They could not identify its location in the human body nor the function of its organs. A few participants listed some of the organs only because they picked the names up while listening to women's discussions on SRH issues in their social circles. The only married girl was in her second pregnancy trimester at the time of her participation and her knowledge was restricted to the fetus "which goes out of the uterus". A notably limited number of participants could define the various organs of a female reproductive system and their specific functions as they obtained educational sessions on that topic as part of biology classes or other lecture series given by NGOs present in the area. The girls in that case preferred the information obtained through NGOs rather than biology classes, since illustrations were used by educators there whereas schoolteachers only concentrated on the mammal's female reproductive system, which the adolescent girls could not relate to.

2.5.1.5 The need for accurate information on SRH topics

Mothers were the most reachable source of information on SRH issues for participants in all FGDs. The girls also accessed information from other sources such as female relatives, friends, the internet, and schoolteachers. The degree of access to these sources greatly varied among participants. Due to embarrassment, some participants preferred to rely on listening and noting others' conversations and habits related to SRH issues like the female physiology. Participants who voiced worries due to their poor SRH knowledge, revealed eagerness to be educated on these topics in a convenient and confidential environment, where knowledge is received from a reliable person such as a specialist in the field of SRH.

2.5.1.6 Sexual harassment experiences and handling mechanisms

All 40 participants talked about experiences of verbal, physical and non-verbal sexual harassment either by males from the refugee community or by males from the Lebanese hosting community, which occurred to them personally or to a girl they know. These incidents were presented in the FGDs as regular and collective experiences. The majority of participants did not report these experiences to their parents due to parents' lack of comprehension on that issue and the girls' feelings of victimization when disclosing the incidents to them.

Sexual harassment had many psychological consequences for the girls, who communicated feelings of being scared and anxious in public places. Only a few participants showed readiness to protect themselves and accordingly declared their lack of worry regarding this issue. The FGD participants suggested different strategies to follow when dealing with sexual harassment: girls' empowerment; proper parenting and raising of boys; physical self-defence; "appropriate" girls' behaviour; requesting help from adults such as relatives, police, and female NGO workers; to disregard incidences; catching people's attention; and not moving in public spaces unaccompanied.

2.5.2 Syrian refugee young women's general SRH status, knowledge, and access to services

The results of the quantitative study are divided into four primary parts: 1) individual agency and displacement; 2) SRH knowledge and sources of information; 3) access to SRH services; and 4) experiences of pregnancy (38).

2.5.2.1 Individual agency and displacement

Only 13 out of 297 participants considered themselves as the head of their household. The rest of the young women named their husband (81.1%), a relative (9.1%) or a parent (5.4%) as the head of the household. Only 14 out of the 297 participants were financially independent whereas the rest depended on their husband (84.2%) or family members (11.1%). Financial support by UNHCR or NGOs was not received by any of the participants. A large proportion of the young women took independent decisions concerning their mobility (38.7%), their ability to work or take part in workshops (38.7%), their physical appearance (56.2%), and the household's daily purchases (33.3%). Nevertheless, and when it was in respect to their own healthcare, the largest percentage of participants (34.3%) had to make a joint decision

with their husband or partner. In case of totally dependent decisions in all the mentioned categories, the husband or partner or another relative (e.g., mother or mother-in-law) had the final say.

2.5.2.2 SRH knowledge and sources of information

The participating young women approached individuals to receive information on SRH topics such as female relatives other than their mother and sister (n = 92), partner or husband (n = 65), and doctor or nurse (n = 40). Less than half of the participants (45.1%) also searched for such information over various online platforms: YouTube (66.5%), Google (26%), and social media (e.g., Facebook and Instagram - 7.5%).

Most of the Syrian refugee young women did not know about any STI (54.25%), whereas 20.5% were not able to identify any of the STIs symptoms. HIV/AIDS and genital itching were the most frequently cited STI and associated symptom among the knowledgeable participants. A large majority of the participating young women (95.6%) knew at least one contraceptive method, with birth control pills, intrauterine device (IUD), and withdrawal being the three most noted methods by the knowledgeable participants. Just over three quarters of the young women (77.7%) could mention at least one warning sign during pregnancy, with vaginal bleeding, intense abdominal pain, and fever being the three most identified symptoms.

No significant correlation was determined between the overall knowledge on SRH and age (p = 0.387), nor between the same overall knowledge and duration of stay in Lebanon (p = 0.90), when conducting bivariate analysis with the Fisher's exact test. Nonetheless, significant correlations were identified between the participants' overall knowledge of SRH issues and the type of setting in which they resided before being displaced to Lebanon on the one hand ($p < 0.001$) and their level of education on the other hand ($p < 0.001$). Young refugee women who lived in Syrian urban areas had higher overall knowledge on SRH issues in comparison with participants who resided in rural areas. Additionally, participants with education lower than secondary level were more likely to have a poorer knowledge of SRH topics in comparison with participants who finished education beyond secondary level.

2.5.2.3 Access to SRH services

When assessing the medical check-ups and procedures received by the participating young women during their displacement to Lebanon, they reported having at least one general check-up by a gynecologist (78.5%), one blood test (66.3%), one check-up by a general practitioner (27.6%), one vaccination (15.5%), and one pap smear (8.8%). A minority of participants (9.4%) did not get any of the mentioned medical services during their stay in Lebanon. The majority of the young refugee women (80.8%) accessed a health facility in Lebanon at least once in order to obtain SRH services, which they got informed about through a friend (45%), a relative (44.2%), a healthcare provider (6.2%), or an NGO worker (3.7%). Only two out of the 297 participants could not recall how they got to know about the facility and its provided services. Pregnancy care and delivery (65%), STIs treatment and counselling (13.7%), family planning services (8.7%), other SRH services such as hormonal therapy and infertility treatment (7.9%), and counselling on various SRH issues (4.6%) were the services received by the young women during their last visit to a health facility. Only one out of the 297 participants received SRH services from a midwife, whereas the rest received them from a medical doctor. Almost three-quarters of young refugee women

(72.5%) obtained the necessary SRH service from a female healthcare provider. According to the participants, the healthcare provider was friendly and helpful (81.3%), unfriendly and disrespectful (9.2%), friendly but unhelpful (7.9%), or inexperienced (1.6%). Most of the young women (73.7%) would return again to the health facility, while the rest would not do so for the following reasons: mistreatment by staff (33%), high cost (32%), dissatisfaction with the quality of service (30%), long waiting time (3%), and hardships in reaching the facility (2%).

More than half of all participating young refugee women (52.2%) preferred to receive SRH services from female healthcare providers and only 1.3% of them favored receiving them from male healthcare providers. A noteworthy percentage of the participants (46.5%) did not have any preference in that regard.

Just half of the participants (49.8%) knew a health facility in Bourj Hammoud that provides SRH services and 36.4% of them were not aware of the type of services available. No significant correlation was found between the familiarity with a SRH care provider on the one hand and number of years lived in Bourj Hammoud, holding the head of household position, income level or healthcare decision-making power on the other hand. More than half of the participants knew where to receive health services for the following five SRH categories: antenatal care (60.6%), general medical diagnosis (57.9%), STIs treatment (54.9%), information on SRH issues (53.2%), and methods of contraception (51.2%). When testing for significant differences in the participants' awareness about the availability of services across these categories, young refugee women showed significantly higher knowledge about services for general medical diagnosis (p = 0.006) and antenatal care ($p < 0.001$), unlike services for information on STIs treatment (p = 0.92), methods of contraception (p = 0.685), and SRH issues (p = 0.270).

2.5.2.4 Experiences of pregnancy

Most of the participating young refugee women (79.5%) experienced pregnancy during their displacement to Lebanon with two (IQR: 1–3) being the median number of pregnancies. More than one-third of the participants (37.7%) had at least one miscarriage. The vast majority of young women who experienced pregnancy in Lebanon had received antenatal care (96.2%), with most of them (75.8%) having three or more antenatal visits for their last pregnancy. For that last pregnancy, 53.8% of the participants wanted to become pregnant then, 33.9% would have preferred to wait longer before becoming pregnant, and 11.9% did not want to become pregnant anymore. Only one of the participants had no response to this question.

2.6 Conclusions

This cross-sectional mixed method research, which was conducted in an urban setting in Lebanon, provides important representations of the Arab and Kurdish Syrian adolescent refugee girls' SRH perceptions, experiences, knowledge, practices, and concerns. It also assesses the overall SRH status of Arab and Kurdish Syrian refugee young women and identifies their knowledge level on different SRH subjects in addition to their access to SRH services during their displacement to Lebanon. This study will contribute to the existing international literature on female SRH in crises in general and on female SRH in the countries of the Extended Middle East and North Africa (EMENA) specifically. The primary data presented

through the qualitative and quantitative parts of the study could be used as a guide to design, develop and conduct future investigations on individual SRH issues experienced by Syrian female refugees in Lebanon specifically and by other forcibly displaced persons in similar contexts and settings generally.

Syrian adolescent girls living in Bourj Hammoud are in critical need of comprehensive knowledge on various SRH issues, such as menstruation and the female reproductive system. Health knowledge should be transferred through accessible humanitarian educational programs that take into consideration the challenges and socioeconomic factors influencing the daily experiences of refugee girls in Lebanon. Since the Syrian adolescent girls consider their mothers as a reliable and accessible source of SRH information, it is important for NGOs that design and implement educational programs to acknowledge and improve the mothers' role. This can be done by supporting them with the necessary knowledge and engaging them in the process of program formation and application. The diversity of Syrian refugee girls and young women - in terms of their educational levels, cultural norms and traditions, and the types of setting they inhabited before being displaced to Lebanon - should be taken into consideration by the active actors in the field in order to effectively deliver SRH information. The delivery of information should be based on the refugees' distinctive personal needs. Furthermore, it is essential to perceive the recurrent exposure of Syrian adolescent girls to different types of sexual harassment in public spaces within the complex conditions of urban settings and their associated SGBV risks, for the purpose of developing efficient SGBV interventions.

Syrian refugee young women, who were displaced to Bourj Hammoud have limited access to SRH services and inadequate comprehensive knowledge on various SRH topics. They mainly recognize and access SRH services that target maternal health. Therefore, it is essential to broaden the awareness among them, and through their diverse networks, on all existing and affordable SRH services on one hand and the health facilities in urban settings where they can access those services on the other hand. Counselling on SRH issues such as STI types and symptoms, contraceptive methods, and pregnancy danger signs is one key category of SRH services that allow refugee young women to acquire knowledge on these issues. Since the Lebanese continuous several crises are expected to additionally worsen Syrian refugee women's SRH status, an assessment of available services and programs is recommended to define their adequacy and effectiveness within the particular context of implementation and in relation to the decisive preventions of poor SRH outcomes.

3. Paper I

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Reproductive Health

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Sexual and reproductive health of Syrian refugee adolescent girls: a qualitative study using focus group discussions in an urban setting in Lebanon

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Abstract

Background: The war in Syria caused the forced displacement of millions of Syrians to neighboring countries. Lebanon is the host country with the largest overall number of Syrian refugees per capita. Adolescent refugee girls experience a unique level of vulnerability during human emergencies and are at increased risk of suffering from poor sexual and reproductive health (SRH) outcomes. We conducted an exploratory qualitative study to learn about the SRH perceptions and experiences of refugee adolescent girls living in Bourj Hammoud, an urban setting in Lebanon.

Methods: We employed a qualitative design with eight focus group discussions (FGDs) conducted with 40 Syrian Arab and Syrian Kurdish adolescent girls between January and March 2020. Every FGD consisted of five participants aged 13 to 17 years. A semi-structured guide was used covering multiple themes: menstruation, puberty, SRH awareness, and sexual harassment. FGDs were transcribed and analyzed using thematic analysis.

Findings: The participants discussed adolescent girls' health and named six elements of good health, such as healthy activities and self-protection. The majority of the FGD participants reported a lack of awareness about menstruation when they experienced it for the first time and the social stigma associated with menstruation. When defining puberty, they indicated its social link to a girl's readiness for marriage and her need to become cautious about sexual harassment. Most FGD participants had very poor knowledge of the female reproductive system. Mothers were the most approached persons to receive information on SRH issues; however, the girls indicated a wish to receive advice from specialists in a comfortable and private atmosphere. All the girls reported that either they themselves, or an acquaintance, had experienced some type of sexual harassment. The girls rarely reported those incidents due to fear of being blamed or subjected to mobility restrictions, or forced to drop out of school.

Conclusions: The findings show the refugee girls need for satisfactory knowledge on SRH issues and interventions to prevent sexual and gender-based violence that take into consideration the complexity of urban settings.

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Plain language summary

After almost 10 years of war, Syria's neighboring countries are hosting millions of Syrians who were forcibly displaced. Most prominent among these countries is Lebanon. Adolescent refugee girls are exposed to precarious conditions, which make them more prone to sexual and reproductive health (SRH) problems. This qualitative study was performed in Bourj Hammoud, an urban setting in Lebanon, in order to explore Syrian refugee adolescent girls' SRH perceptions and experiences. The agenda of the International Conference on Population and Development (ICPD) in addition to the Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings (IAFM) and its Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings issued by the Inter-Agency Working Group on Reproductive Health in Crises (IAWG) formed the framework of this study. Focus group discussions were performed with 40 Syrian Arab and Syrian Kurdish adolescent girls, each group consisting of five participants aged 13 to 17 years. Different themes were discussed within the groups including menstruation, puberty, and sexual harassment. The participants talked about the social stigma related to menstruation and the social link between puberty, a girl's readiness for marriage, and her need to be careful about sexual harassment. Most of the girls had insufficient information about the female reproductive system. The girls consulted their mothers to learn about SRH issues; however, they expressed a wish to receive well-informed advice from specialists in a safe atmosphere. All the girls reported incidents of sexual harassment, which happened either to them or to other girls they know; however, they were discouraged to report them because they feared other consequences, such as being blamed or not being allowed to go to school anymore. The outcomes of the study show the girls' urgent need to have adequate information about SRH issues and appropriate interventions to prevent sexual and gender-based violence within complex urban settings.

Keywords: Adolescent girls, Refugee, Sexual and reproductive health, Urban setting, Syria, Lebanon, Qualitative research, Focus group discussions

Background

Wars and forced displacement cause lives lost, poverty, disease transmission, and shortage of life-sustaining services (1). In 2019, 70.8 million individuals, including 25.9 million cross-border refugees, were forced to flee their homes from brutality, armed conflicts, and natural disasters (2, 3). About half of the refugees worldwide are girls and women, who may experience intensified vulnerability and human rights exploitation (4, 5). Due to forced displacement, adolescent girls may lose support from their family and social networks, and be exposed to stressful conditions and unsafe environments, such as extreme poverty, having to drop out of school, human trafficking, risky occupations, and abuse. During humanitarian crises, adolescent girls are more prone to adverse sexual and reproductive health (SRH) outcomes, such as sexual and gender-based violence (SGBV), unwanted pregnancy, HIV infection, maternal death, and child marriage (6–8). At present, three-fifths of total worldwide maternal deaths happen in humanitarian and emergency settings (8). It is estimated that more than 500 women and adolescent girls die daily due to complications related to pregnancy and childbirth in such settings (8). Adolescents' poor SRH outcomes are frequently caused by a shortage of adequate SRH knowledge in addition to a dearth of accessible youth-friendly facilities that could provide SRH services and products (8, 9).

Currently, and after almost 10 years of continuous war in Syria, 5.6 million registered Syrian refugees live in Lebanon, Jordan, Iraq, Turkey, and North Africa. Lebanon is considered the host country with the largest overall number of Syrian refugees per capita (10). According to demographic data published by the United Nations High Commissioner for Refugees (UNHCR), 23% of registered Syrian refugees are females under 18 years of age (10). In 2013, the United Nations Population Fund (UNFPA) conducted a situation analysis of youths in Lebanon affected by the Syrian crisis, which found that Syrian youths had insufficient knowledge about different SRH issues. For instance, 85% of the participants did not know which part of a woman's menstruation cycle corresponds to potential conception (11). Syrian adolescent girls in Lebanon report feelings of isolation, not being safe, and being in distress because of the possibility of being exposed to sexual harassment and violence (12). They are also more likely to be subjected to child marriage due to parental safety concerns, difficult economic situations, and interruption of school education (13).

Although over 60% of the world's refugees live in urban areas, there is a shortage of information about their living conditions and daily experiences (8). Most Syrian refugees reside in Lebanon in informal tented settlements (ITSs), rural or urban settings, with the majority living in poor and overcrowded urban contexts; however, the Lebanon Crisis Response Plan (LCRP) mostly targets refugees living in ITSs (14). Refugee women and girls living in urban settings frequently suffer from unmet SRH needs. The limitation of funds for SRH services, the physical

difficulty in accessing those services, the lack of privacy and confidentiality, and the sensitivity around SRH are some of the reasons for these unmet SRH needs (15). The impact of living in refugee urban communities on adolescent girls, which is often ignored, varies in particular from that of adolescent boys or adult women (12).

The SRH experiences and needs of girls and young women are neglected in research for many reasons. The sensitivity of these issues and the necessity to perform studies with minor participants in line with ethical standards are some of these reasons. Furthermore, SRH in humanitarian settings is frequently not seen as important as other life-saving factors including water, sanitation, shelter, and nutrition (16, 17). However, this has started to change in the past few years, which have seen research on adolescent refugee girls begin to expand. Such research provides data to the humanitarian sector on the distinct concerns and difficulties experienced by this vulnerable group and shows how profoundly their lives are being affected by the crisis (12). Previously, some studies have been done on the SRH status of Syrian adult women in Lebanon, but very few studies have explored the SRH of Syrian adolescent girls (18–20).

This exploratory study aims to examine the SRH perceptions and experiences of Arab and Kurdish Syrian refugee adolescent girls living in an urban setting in Lebanon. The framework of this study is based on the agenda of the International Conference on Population and Development (ICPD) in addition to the Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings (IAFM) and its Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings issued by the Inter-Agency Working Group on Reproductive Health in Crises (IAWG) (21–23). The study findings will not only inform the work of Lebanese and international organizations and institutions, but also add to the existing global literature on refugee adolescent girls' SRH by expanding the research to the Extended Middle East and North Africa (EMENA) countries. Thus, this study provides an opportunity to contribute to refugee adolescent girls' well-being, consider their SRH needs, and avert poor SRH outcomes.

Methods

Study setting

Bourj Hammoud is an industrial area in North-East Beirut, which is considered one of the most densely inhabited areas in the Middle East. Its history of hosting refugees goes back to the 1920s, when the survivors of the Armenian Genocide arrived after fleeing persecution by the Ottomans (24). Nowadays, the suburb mostly accommodates inhabitants with lower socio-economic status: Lebanese citizens, Syrian, Palestinian, and Iraqi refugees, in addition to migrant workers from Asian and African countries (25, 26). In recent years, the area became a place of residence for many Syrian refugees in Lebanon (27). According to UNHCR, 8,747 Syrian registered refugees live in Bourj Hammoud (28). Finding appropriate accommodation in that area is considered problematic due to the challenging living circumstances, such as absence of clean drinking water, secure electricity, robust infrastructure, and sufficient hygiene standards (12).

Study design

The framework of this study builds on the principles and goals of the ICPD in addition to the IAFM and its Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings delivered by IAWG (21–23). The ICPD's Programme of Action, which was held in Cairo in 1994 and attended by 179 countries, not only firmly placed Reproductive Health and Rights on the international agenda but also presented a major development in considering SRH care and services fundamental for all married and unmarried individuals, including adolescents and youth (21). In the section VII of its Programme of Action, the ICPD determines SRH care for people of suitable age groups, which covers different services including: i) Information, education and counseling on human sexuality and reproductive health; ii) Prevention and surveillance of violence against women, care for survivors of violence and other actions to eliminate traditional harmful practices. Moreover, the ICPD highlights the particular challenges faced by migrants and displaced people in general, and women and adolescents specifically, when accessing SRH services and how these services should complement their precise SRH needs (21).

In its 2018 version of IAFM, IAWG acknowledges sexual and reproductive health and rights (SRHR) as a key element in accomplishing human rights goals such as the right to health, ill-treatment, privacy, and education, in addition to protection from discrimination, specifically that which is based on sex and gender. This version of IAFM underlines the importance of individuals affected by crises and living in humanitarian settings obtaining comprehensive SRH knowledge and services in order to improve SRHR worldwide. Additionally, the manual focuses on those individuals' ability to make informed decisions regarding their SRH without being subjected to intimidation, intolerance, and violence (22). IAWG gives further explicit focus on adolescent sexual and reproductive health (ASRH) through a toolkit that guides IAFM. IAWG is a humanitarian mandate, in which the promotion and delivery of knowledge and accessible services are important components. On the one hand, the toolkit shows the potential harmful consequences if adolescent

sexual and reproductive health and rights (ASRHR) in emergency settings continue to be overlooked. On the other hand, it draws attention to ASRHR and the positive health and societal outcomes of providing adequate ASRH information and services for refugee adolescents in general, and refugee adolescent girls in particular, in coordination with them (23).

Since the main aim of this study was to learn about refugee adolescent girls' SRH perceptions and experiences, we employed a generic qualitative research approach (29–31). Focus group discussions (FGDs) were chosen for this study, as they give the opportunity for participants to share their knowledge, beliefs, and experiences within a discussion that is shaped by their own concerns and preferences (32, 33). The flexibility of this research method not only allows participants' reflexivity during the description and interpretation of their own views and practices, but also flattens the power hierarchy between the participants on the one hand, and the researcher on the other hand, since the focus is on the participants' thoughts and expressions (34–36). What makes FGDs a unique dialogical qualitative research method is the interaction between the participants, which allows both similar and diverse contributions to the discussion to develop, and a richer interpretation of these contributions (37, 38). FGDs were found to be a preferable research method for adolescents compared to interviews, since FGDs involve participants' peers in an informal and less intimidating environment (39, 40). For comparing FGDs and centering them around important items, as mentioned above, we used a semi-structured guide with questions on specific themes: menstruation, puberty, SRH awareness, and sexual harassment. These health issues and SRH topics were chosen as the main themes to be examined, based on the tool validated by UNFPA and Save the Children: Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings (41).

Sample participants

Three Syrian female community gatekeepers from different age groups, various Syrian regions and ethnic backgrounds, and with distinct socio-economic characteristics (education, employment, and household income) were responsible for recruiting the participants to ensure an inclusive approach, guaranteeing the possible diversity in terms of age, social, ethnic, and religious background. Gatekeepers' involvement in research on sensitive topics, such as SRH, is key to reach refugee groups who show concerns about trust (42–44). The first phase of field work, prior to conducting the FGDs, included developing relationships with local actors and inhabitants, in addition to identifying the area's particular context (45, 46). The first author was introduced to the gatekeepers by a fellow researcher from Lebanon who had previous field work experience in Bourj Hammoud. The gatekeepers were able to link the first author with the participating girls' families, which they knew prior to the study, due to the shared and tightly connected social networks among Syrian refugees in the area. Purposive sampling was used based on the characteristics of the participants: gender, age, nationality, and ethnicity. Sampling aimed to include married and unmarried Kurdish and Arab Syrian adolescent girls, aged between 13 and 17 years, and from different Syrian governorates. The sample size of the study, which was determined based on the principle of data saturation, consisted of 40 participants in eight FGDs. Every FGD was formed of five participants. Data saturation is achieved when no additional knowledge is produced from new FGDs (47, 48). In the case where information is being repeated, the researcher decides to stop data collection and move to data analysis since the representation of participants' views has been adequately covered (49).

Data collection

Data was collected from January to March 2020. Data collection was performed by the first author, a Lebanese female doctoral researcher, who is an Arabic native speaker, knowledgeable about the research context, and has previous experience in qualitative research.

Each FGD consisted of five participants aged between 13 and 17 years with a mixture of marital statuses. The community gatekeepers were responsible for arranging the groups under the direction of the doctoral researcher. Sociocultural homogeneity was ensured within every group, assigning participants who had the same ethnicity, came from nearby Syrian regions, and shared similar social networks to the same group. This homogeneity helped to create a feeling of comfort and familiarity among the participants, enabling a smooth flow in the discussions, and insuring active participation from all the girls (37, 39, 50).

FGDs were performed privately and without the presence of a parent or a caregiver. They took place in a closed room in the gatekeepers' apartments or in one of the participants' apartments, since these places were easy to access for all participants and were considered safe and trustworthy by the participants' parents or caregivers. In addition to the researcher, who established and encouraged dynamic group interaction throughout the discussion, a student assistant was present to take notes on non-verbal communication. At the beginning of each FGD, the participants were asked about some demographic information and then were directed into the discussion through a semi-structured guide with questions on the specific themes. The FGD guide is presented in Additional file 1. Flexibility to add new topics throughout

the discussions was possible until data saturation was achieved. The duration of the FGDs ranged between 45 and 75 min.

Data analysis

FGDs were audio recorded, transcribed verbatim, and translated into English. Field notes taken after every FGD were also used during the analysis. To preserve confidentiality, participants' names were removed during transcription and every participant was assigned a participant identification number. Descriptive data analysis was done using thematic analysis (51, 52). A pre-defined codebook of themes and sub-themes was generated based on the study's frameworks, the existing international literature on ASRHR in humanitarian settings, and the FGD guide. New codes were added for the newly developed themes that arose from the FGD data. For instance, the following codes were chosen for the theme on menstruation experiences and management: first menstruation experience; lack of knowledge; negative reactions; new practices; change of daily routines; menstrual pad buying; information on cycle and tracking; source of information; misconceptions; explanations provided; negative emotions; and social stigma. A sample of the codebook's schematic representation is shown in Additional file 2. As a first step, the coding was performed independently by two co-authors for each transcript through a close line-by-line reading. As a second step, these two co-authors engaged in discussions to classify and confirm the themes and sub-themes. No major disagreements over code or theme identification took place between the co-authors. The co-authors could not go back to the participants to validate the findings as the participants were not assigned direct identifiers. Furthermore, the participants' parents or caregivers were anxious about sharing their address or contact details due to security concerns.

Ethical considerations and researchers' positionality

Before starting data collection, the researcher clarified to the participants and their parents or caregivers the aims and significance of research projects in general and, as well as the specific aims of this study: the identification of SRH perceptions and experiences of Syrian refugee adolescent girls living in Bourj Hammoud- to inform academics and practitioners working in the field. The participants were informed about their right to withdraw their participation at any time. The girls' participation in the study depended on their willingness to take part in the FGDs, their oral and written Arabic informed assent, and the oral and written Arabic informed consent of their parents or caregivers. Participants' mothers, mothers-in-law, and aunts provided the majority of the informed consent.

Even though FGD as a research method presents various advantages when collecting data on sensitive topics from young participants, the different ethical challenges should be taken into account. Care should be taken when conducting research with young individuals, since they may not be able to fully express composite perceptions and opinions within groups. Their presumed limited abilities and competences when articulating ideas, in contrary to adult participants, might be among the reasons (53, 54). Furthermore, although FGDs give young participants the opportunity to contribute within an engaging group setting where they can learn from the views and experiences of each other, this process can be counter-educational when misinformation is shared (55–57). In cases where the researcher suspected that misinformation was circulating, she held a 15-min informal conversation with the participating girls after the closure of the FGD, where she corrected and rediscussed information. Another ethical challenge when conducting FGDs with young girls experiencing certain vulnerability is the possibility of revealing sensitive and personal opinions and experiences that could distress the participants after data collection (58). This was particularly challenging when discussing the theme on sexual harassment. Although the researcher took several actions and measures before, during, and after conducting the FGDs to preserve confidentiality and ensure that no participants are unintentionally harmed, it is crucial to take into consideration the safety and well-being of the participants in every future research that tackles sensitive topics such as violence against women. To deal with this challenge, the female researcher who was also the facilitator, created an asserting, cooperative, and non-judgmental atmosphere when conducting FGDs and employed a FGD guide that allowed flexibility by mentioning the themes that should be addressed in every FGD rather than certain fixed questions. This gave the young girls agency in navigating the discussion in a way that made them feel comfortable when interacting and sharing, without being anxious about others' judgment (59).

As researchers in the fields of public health, forced migration, and cultural anthropology, we are devoted to human rights, social justice, and societal development. We believe in the importance of research in raising awareness about the living conditions and experiences of refugee girls and women on the one hand, and in employing its findings into applied programs and policies on the other hand. Our biases and expectations were frequently openly discussed within the team in an attempt to assure objectivity while designing the study, conducting the FGDs, and analyzing the data. These biases and

expectations were drawn based on reports and articles from other studies investigating the health status of refugee women living in EMENA in general and refugee girls living in Lebanon in particular. Since our research team members come from different backgrounds—Lebanese and European—and have different perspectives on the topic of conflict-affected adolescent girls' SRH based on their various fields of academic research, we believe that neutrality when conducting this study was greatly enhanced. Furthermore, the linguistic and ethno-cultural background partially shared by our team's Lebanese researcher and the study's Syrian participants provided potential relational and emotional benefits for the girls and their parents or caregivers, helping them to feel empathized with and appreciated due to a common linguistic and cultural understanding (60).

Findings

The demographic characteristics of participants and the themes that emerged from the FGDs are presented below. Six themes arose from the FGD analysis: 1) understanding adolescent girls' good health; 2) menstruation experiences and management; 3) perceptions of puberty; 4) knowledge about the female reproductive system; 5) the need for accurate information on SRH topics; 6) sexual harassment experiences and handling mechanisms.

Demographic characteristics of the participants

A total of 40 girls participated in the FGDs. The mean age of participants was 14.5 years with 85% (n=34) of the girls being Syrian Arab and 15% (n=6) Syrian Kurdish. The participants came from six different Syrian governorates, with the majority (67.6%, n=27) arriving from Aleppo. The majority of the participants were single (87.5%, n=35), whereas three girls were engaged, one girl was married, and one girl was divorced. Around three-quarters of the participants (72.5%, n=29) had been living in Lebanon for more than five years. About 67.5% (n=27) of the girls had completed at least primary-school education and 30% (n=12) had completed middle- school education. A total of only 57.5% (n=23) of girls were currently in school and 45% (n=18) were participating in non-governmental organizations' (NGOs) activities and training. The detailed demographic characteristics of the FGD participants are presented in Table 1.

Table 1 Demographic characteristics of the FGDs participants

	Number (*n*=40)	Percentage (%)
Age		
13 Years	12	30
14 ears	12	30
15 Years	7	17.5
16 Years	4	10
17 Years	5	12.5
Ethnic Group		
Arabs	34	85
Kurds	6	15
Governates of Origin in Syria		
Aleppo	27	67.5
Raqqa	4	10
Idlib	4	10
Deir ez-Zor	2	5
Damascus	2	5
Hama	1	2.5
Duration of stay in Lebanon		
< 1 Year	1	2.5
1–5 Years	10	25
> 5 Years	29	72.5
Educational level		
Never attended school	1	2.5
Primary-school	27	67.5
Middle-school	12	30
Currently in school		
Yes	23	57.5
No	17	42.5
Participate in available NGOs activities/trainings		
Yes	18	45
No	22	55
Marital status		
Single	35	87.5
Engaged	3	7.5
Married	1	2.5
Divorced	1	2.5

Understanding adolescent girls' good health

None of the participants was familiar with the term SRH. When being asked about it during the FGDs, the girls could neither define it nor name any ideas related to it. Therefore, the question was modified from their comprehension of adolescent girls' SRH in particular to their comprehension of adolescent girls' health in general. The FGD participants named six elements of good health for adolescent girls: healthy activities; hygienic habits; absence of diseases; nutritious diet; good emotional health status; and self-protection.

The girls considered basic physical activities and sports; sleeping sufficiently; drinking enough water; contributing to household chores; and preserving home tidiness as daily acts that contribute to their physical well-being. One participant stressed the importance of haircare and cutting it short because it influences the growth of a girl's body:

"We take care of our health by cutting our hair. I

have heard that the length of a girl's hair affects her body height. If the hair becomes too long and she doesn't cut it, she will stop growing." (14 years old).

Hands washing before and after meals; showering daily; body hair removal; nail cleaning; teeth brushing; changing clothes and underwear daily; changing pads frequently; and external female genital organ hygiene were the habits the participants connected to good adolescent girls' health. The girls also mentioned lack of illness as a key sign of wellness. Wellness also included the absence of pain, regular doctors' check-ups, medication, having strong immunity, and hormonal balance:

"A girl should visit doctors with different specializations. Even if she cannot afford it, she can go to doctors who have free clinics or free campaigns. Women should also have breast cancer screening in those campaigns." (14 years old).

The majority of participants mentioned the importance of having to a healthy diet in order to have physical well-being. One participant claimed that girls and women should have particularly nutritious meals compared to other family members to have supplementary support, since girls and women have many responsibilities. Additionally, two participants talked about the need for a girl's body wellness and strength to be ready for pregnancy and carrying a healthy baby. Few participants pointed out the connection between emotional health and physical health and how the status of the first affects the second:

"To be honest, when I am psychologically at ease, everything in me rests. When I am sad, everything in my body starts to hurt." (16 years old).

The adolescents emphasized the need for self-protection to maintain good health. This involved avoiding carrying heavy items; preventing physical wounds; defending oneself when being physically or sexually harassed; and not getting involved in romantic relationships. According to the participants, all these factors have negative effects on adolescent girls' health.

Menstruation experiences and management

Menstruation experiences and management was the theme that emerged from the FGDs on which participants elaborated the most. Five sub-themes were discussed by the girls: 1) first menstruation experiences; 2) knowledge about the menstrual cycle and sources of information; 3) menstruation hygiene management (MHM); 4) adapted routines during menstruation; and 5) social, psychological, and physical experiences.

First menstruation experiences

The majority of the FGD participants described their first menstruation experience as shocking and scary. One of the participants explained that she was familiar with the topic from overhearing the women in her family talking about it, while another participant said that her mother briefly mentioned it to her before her first experience:

"I did not know about it when I had my period for the first time. I thought it was a kind of diarrhea. I did not feel anything on the first day. On the second day, when it became worse, I told my mother. She said that I was having my period." (14 years old).
"I knew about it because I had heard my sister and my sister-in-law talking about it before. I had my periods six times, six months, and I did not tell anyone about it. I was buying the pads without anyone noticing, using my own savings." (16 years old).

Some of the participants talked about hiding their discovery from their parents for some time because of embarrassment and their lack of understanding about what was happening, whereas others shared it immediately with female family members in order to get help:

"I was scared. I didn't tell my parents on the first day. I was showering every now and then thinking that it would go away. It was so scary... something happening for the first time in my life." (15 years old).

The participants also talked about the difficulty they faced when trying to use disposable pads in an effective way for the first time since they had not received any previous instructions about how to use them:

"I changed the pads more than five times per hour when I had my period for the first time. I was not using them in the right way. No one had taught me how to do so before. When I showed my mother the leaked blood, she told me that I was not using the pad correctly. She taught me how later." (13 years old).
"I was scared during the first menstruation; I was in school and did not know how to use the pads." (17 years old).

Knowledge about the menstrual cycle and sources of information

All participants mentioned their mothers as the first person they approached when they had questions regarding menstruation. Other female relatives were also consulted by some of the participants. The girls talked about receiving additional information about menstruation through informal talks in school with female friends and teachers.

A few girls had the opportunity to participate in social activities offered by a local NGO and scouts, where the topic of menstruation was explained. One participant talked about watching YouTube videos on menstruation symptoms and how to have a healthy routine during menstruation. Another participant mentioned the mosque as the place where she received information about the topic:

> *"I used to go to a mosque. The teacher of the mosque was explaining menstruation to older girls. I used to listen to her but did not understand what she was talking about exactly." (14 years old).*

Half of the girls participating in the FGDs could not explain the reasons behind menstruation. The rest of the girls discussed menstruation as a sign of puberty; personal maturity; hormonal change; and transition from childhood to womanhood. They frequently talked about menstruation as a mechanism to get rid of the toxic blood in their bodies and to prevent diseases. The girls also linked menstruation to awareness of and ability to get pregnant. The majority of the participants did not know how to track their menstrual cycle. Only one of the participants was able to clearly explain the menstrual cycle's three phases and duration:

> *"I know about this topic because of social activities in scouts. A girl has her period every month. I check the date when I got my period and add 21 days to that. Let's say I had my period on Monday and it was over on Sunday, I add 21 days to this to know when I will have my next period." (15 years old).*

Many myths about beneficial and harmful practices during menstruation exist. The girls pointed out some restrictions that should be followed during menstruation. Consuming certain foods and drinks like oil, starch, and hot drinks are encouraged during menstruation whereas consuming cold food and drinks are not allowed:

> *"I hate menstruation during summer because I can't eat ice-cream. People around me say that it is harmful then, like cold water and soft drinks. We have to drink anise tea and it is very hot for that." (13 years old).*

One participant complained about not being allowed to take painkillers during menstruation or drink more water because of concerns about becoming infertile or developing ovarian cysts:

> *"I am in so much pain when I have my period. I ask my mom to take me to the doctor to give me medicine. Our relatives tell my mom not to do so because then I will not be able to have kids when I'm married. Also, people told us that if a girl takes medicine, she will not have her period often. Others told us that if a girl drinks a lot of water, she will have water sacs on her ovaries (cysts filled with fluid)." (17 years old).*

Menstrual hygiene management (MHM)

All FGD participants reported using disposable pads that were always bought out off their parents' personal income or their own savings. The participants' individual monthly needs varied from one to three packets of pads per month with the costs varying from $1.- to $2.5 per packet. The pads were bought from local stores like supermarkets and $1 shops (stores that sell low-cost items for one US-Dollar or less).

The participants had access to cheap disposable pads but complained about their bad quality. The girls described their experiences using the pads as unpleasant, painful, and irritating. Some participants could change their pads only one to three times per day. The mothers of most of the girls were responsible for buying the pads for them, which made them uncomfortable since their mothers did not know what the most suitable type of pads for the girls was. A few participants were satisfied with the choice of their mothers. The husband of the only married participant in the FGDs was responsible for buying her the pads.

The majority of participants felt shy and avoided going into stores to buy pads where the sellers were males. They preferred to ask a family member in order to avoid social stigma:

> *"I buy the pads for myself. I walk for 15 minutes to go to a shop where the seller is a woman. So, I walk all the way there just to buy from her." (17 years old).*
> *"I don't like to buy the pads myself. Sometimes the person selling in the shop is a guy... whenever I see him, I return the pads and don't buy them." (15 years old).*

Only a few participants did not express discomfort when buying from male sellers:

> *"I don't get embarrassed when buying from a man because everyone knows that girls menstruate... it's normal." (13 years old).*

Adapted routines during menstruation

The participants identified new habits and practices that they followed during menstruation. Wearing dark colored, long clothes that cover helped the girls overcome the anxiety associated with period stains. The participants preferred to stay at home during their

menstruation with minimal physical activity for different reasons, such as having easy access to the bathroom, resting when having severe pain and heavy bleeding, and avoiding the exhaustion when at school. One of the participants considered menstruation a monthly opportunity to be exempted from household chores and carrying heavy items whereas another participant complained of being obliged to carry on with household chores while experiencing menstrual pain:

> *"Regardless of the pain, it is good that I can sit alone. No one bothers me. I can do whatever I want. I am not required to do anything. I don't have to do the household work or hold anything heavy." (14 years old).*
> *"I have to continue the household work when I have my period, even while experiencing pain around my hips." (17 years old).*

All girls mentioned body hair removal in general and pubic hair removal in particular as a monthly habit that should be performed right before or after menstrual bleeding. In addition to that, they considered having an extra shower at the end of menstrual bleeding necessary. The habits raised are important for the girls for hygienic and religious considerations.

Social, psychological, and physical experiences

All participants expressed negative emotions when talking about menstruation. They described it as a burden accompanied by physical pain, which makes them feel lonely, uncomfortable, worried, embarrassed, and nervous. Participants pointed out the social stigma associated with menstruation and explained how it is considered shameful and improper within their community. The girls spoke about their concerns of having their menstruation when being outside their homes, which subjects them to gossips and bullying, mainly because of the possibility of staining:

> *"It is something that makes me shy. I feel embarrassed to say it (menstruation)." (15 years old).*

One of the participants disagreed with her peers and explained that menstruation should not be distressing since it is something natural that happens to all girls.

> *"There is nothing embarrassing about it because every girl will have her period, not only us." (13 years old).*

Perceptions of puberty

The majority of the participants were able to explain what puberty is through the description of changes in physical and personal characteristics, and social considerations. A few participants could not describe any change connected to puberty and were only familiar with the term itself.

The girls talked about breast development; body hair growth; starting menstruation; acne; height increase; hips widening; and weight change as the physical signs of puberty. However, they were all not aware of these changes before experiencing them:

> *"The changes started to happen when I was 11 years old. My breast started to become bigger. I thought that it happened because I swallowed olives. I found it weird. I was so embarrassed to ask my mom." (14 years old).*

Most of the participants mentioned the need to accept the physical changes accompanying puberty although they found them repelling and distressing, since they expose them to embarrassing situations and bullying, especially from their male schoolmates and friends:

> *"I find the changes ugly, but they will happen anyway. They happen for us in order to grow older." (14 years old).*

The participants discussed puberty as a stage where girls leave behind childhood, and along with it play, to become mature and determined, with the ability to understand life and handle responsibilities. A few participants claimed that puberty means a girl's need to become cautious about sexual harassment and others' behaviors towards her. The FGD participants complained about suddenly being under 'social surveillance' once they reached puberty. They spoke about their parents' new concerns and rules, which focused on girls' modest clothing and 'good behavior':

> *"It is something very annoying because parents start to control a lot. I could wear shorts when I was younger. They tell me that I've reached puberty and became old now, so I can't do that anymore. Everyone watches whatever I do. As if they are waiting for a mistake." (15 years old).*

Adolescents also pointed out the social association of puberty with readiness for marriage:

> *"The first thing the moms say when we start puberty: you are suitable for marriage now." (15 years old).*

The girls described their feelings of unhappiness at being treated unexpectedly as adults when they still wanted to live in their childhood:

> *"As if there are two teams. One for kids and one for adults. You suddenly leave one and join the other. I did not like that. I don't like the new team." (15 years*

old).

"I wish I could go back and be a child." (14 years old).

In one of the FGDs, participants talked about traditions performed by their female relatives once they reach puberty in order to control the changes happening to the body and its development:

> *"Once my breasts started to become bigger, my aunt brought a coffee cup and put it on my breast, so its shape would get formed like the cup and not become so big. She also took three of my fingers and immersed them in water and salt, to have my period for only three days." (17 years old).*

Knowledge about the female reproductive system

Most FGD participants had very poor knowledge about the female reproductive system. They confused it with digestive and urinary systems when asked about the location of the female reproductive system. Some participants were only familiar with the reproductive system organs' names from overhearing the women in their community discussing their SRH problems. The only married girl in the FGDs was in her second pregnancy trimester during her participation and the only information she knew was that the fetus "goes out of the uterus". Very few participants were able to identify the different organs of the female reproductive systems and their functions. Those participants received information through lectures offered by one local and another international NGO, in addition to biology classes. However, the participants expressed their preference to receive information through the lectures at NGOs because they were clear and explained using illustrations, whereas the information presented in biology classes focused only on mammals' female reproductive system, to which participants could not relate:

> *"It is not the same in biology class. The teacher talks about animals in the class, but we talk more about ourselves and look at illustrations at the institute." (14 years old).*

The need for accurate information on SRH topics

Throughout the FGDs, girls mentioned different sources from which they received information about SRH topics such as puberty, menstruation, and female physiology. The level of access to sources varied significantly from one participant to another. Mothers were the point of reference mentioned most frequently across all the FGDs. The girls stated other sources, such as female relatives, friends, local and international NGOs, the internet, biology classes, and teachers. A few participants chose not to ask for information, because they found the process embarrassing. Instead, they counted on self-made conclusions from overhearing and observing others. However, the participants indicated their wish to be able to speak to a specialized practitioner:

> *"It would be good to have a center where a woman teaches us about the body changes. Those are very useful information." (17 years old).*
> *"I talk to my mom, but I would prefer to talk to a doctor who is specialized in such issues." (14 years old).*

According to the girls, the exchange of knowledge should be done in a comfortable and private atmosphere with a trust-worthy person, who is direct and easy to talk to. Some participants expressed their concerns regarding their lack of knowledge about future SRH issues and experiences such as body changes and sexual intercourse. They showed interest in learning more about these topics:

> *"I would prefer someone to talk to me directly about sexual intercourse so that I don't get scared when it happens. It is something upcoming and I am scared about it now." (16 years old).*

Sexual harassment experiences and handling mechanisms

Shared experiences of sexual harassment

All FGDs participants reported that either they themselves, or a girl they knew, had been subjected to sexual harassment by a fellow male refugee or a male from the host community. They described their experiences as shared and ordinary incidents since they happened often:

> *"I was sexually harassed many times when I was in school. That's why I left school". (15 years old).*
> *"I've experienced a lot of harassment. We are used to it now. It has been like this ever since we arrived here." (17 years old).*

Verbal sexual harassment experiences included 'cat calls' (public sexually indicative requests or remarks), comments on the girls' clothing or body, and asking for certain favors:

> *"It happened with a friend of mine. We were walking on the street. Some guys started cat calling, commenting on what my friend was wearing and the look of her hair." (14 years old).*
> *"Once a guy was following me with his car. He winked at me and asked me to join him in the car. I told him that I don't want to and changed my direction." (17 years old).*

Physical sexual harassment incidents involved unwanted touching of the body and clothing.

"A friend went to the supermarket to buy pads for her sister. The guy thought that they were for herself. He touched her. She tried to avoid him, but he insisted. She ran out of the shop while crying." (17 years old).
"I was getting food for my family. An old man followed me. He tried to touch me, but I ran away and went back home." (14 years old).

Non-verbal sexual harassment events included frequent following, whistling, staring, and surveying the girls' bodies:

"It happens to me whenever I go to school. Last time, a guy followed me with his car. I had an umbrella with me, I thought that I would hit him if he approached me." (14 years old).
"A guy follows me whenever I go to my friend's place. I go inside a building to hide. I still find him there when I go out. I change my direction and then go to my friend." (14 years old).

Most girls did not inform their parents about their experiences. During the FGDs, the girls frequently talked about their parents' lack of understanding and the fear of being blamed. Additionally, the participants shared their anxiety that their parents would discover what happened to them, which would lead to them being subjected to mobility restrictions and made to drop out of school:

"I feel embarrassed to tell my parents, they will not allow me to go to school anymore." (14 years old).
"My friend was sexually harassed, but she did not tell her parents; she feared them. They will think that she caused it." (13 years old).
"We are used to not sharing what happens to us with others. They would not let us go out after that. That's the mentality of parents." (16 years old).

Despite the fact that they considered their mothers more tolerant compared to their fathers, very few participants reported sexual harassment incidents to their mothers. Two participants complained about their mothers' negligence on the issue after informing them about their experiences.

Psychological effects of sexual harassment

The girls expressed their feelings of worry and fear about being sexually harassed when visiting public spaces. They talked about the offensive acts of being subjected to assault, privacy intrusion, and disregard for personal will:

"I feel scared and nervous when someone follows me. I think that he will harm me." (14 years old).
"We take the bad example from the bad guys. When I go with my sister to buy something from the shop in the evening, my mom keeps on watching us from the balcony, and we get really scared if we see a guy on the street. We start to run." (13 years old).

A few participants claimed no nervousness concerning sexual harassment, since they are always ready to protect themselves:

"I am not scared of it because I know that I can defend myself. I can reply to the guy if he cat calls." (13 years old).

Strategies to deal with sexual harassment

The participants elaborated on approaches to avoid and respond to all forms of sexual harassment. Girls' empowerment; good parenting and boys raising; physical self-defense; 'appropriate' girls' behavior; asking for adult help; ignorance; getting people's attention; and not going to public spaces alone were the tactics suggested by the girls:

"Every girl should have a strong personality to defend herself. She should not be silent about it." (15 years old).
"Parents should take care of their boys and check how they are behaving. Some parents don't do that." (13 years old).
"We should not go into small streets. We should walk on the main street where a lot of people are present, because he might push you into a building." (15 years old).

The adolescent girls expressed their wish to be able to report the incidents to an adult they trust and can freely talk to without being accused, as a method to protect themselves from the harmful consequences of sexual harassment. Parents, close relatives, policemen, and NGO female workers were the actors suggested by the participants from whom they wish to seek help.

"Every girl needs someone to be at her side and defend her. She needs to know that she is safe". (14 years old).

Discussion

This qualitative study is one of very few exploring SRH perceptions and experiences among Arab and Kurdish Syrian adolescent refugee girls in an urban setting in Lebanon. Its findings present important outlooks on the girls' perceptions, experiences, knowledge, practices, and concerns regarding their SRH.

Before representing and tackling the different findings of this study, it is salient to contextualize them in alignment with the challenging legal and financial status of Syrian refugees living in Lebanon, the worsening Lebanese political and economic circumstances, and the inequitable healthcare system in the country. Lebanon did not sign the 1951 UN convention or its 1967 protocol concerning refugees' status and its administration. The state signed instead a Memorandum of Understanding (MoU) with UNHCR in 2003, which defines the country as a place of transit and not of asylum. This gives the Lebanese government the authority to establish the legal status of refugees, which determines their rights, in line with its own laws (61, 62). Since 2014, many policies have been applied in Lebanon aiming to limit the number of Syrian refugees in the country. Thus, an increase in informality and illegality in addition to deteriorating living conditions has arisen (63). At present, 78% of Syrian refugees do not acquire legal residency, which restrains their freedom of movement, capability to work legally, and access to services such as healthcare and education (64, 65). Additionally, the Lebanese Ministry of Labor allows Syrian refugees to work in only three sectors: construction, agriculture, and cleaning (63). As a result of the legal restrictions and the economic crisis that Lebanon has been experiencing since 2019, it is estimated that at least 75% of Syrians in Lebanon live below the poverty line (66, 67).

Lebanon received a large number of refugees; however, the limited resources and services, in addition to poor infrastructure, has generated tensions between Lebanese nationals and Syrian refugees (12). Furthermore, the economic and political crises in the country challenge intercommunal social cohesion (68). Several reports highlight concerns regarding low social cohesion between Lebanese and Syrian refugees (69–71). Social cohesion is important for improving both individual and public health (72, 73). The Lebanese healthcare system is considered inequitable with a fragile structure that mainly concentrates on delivering health services, without taking into account the relevance of prevention, design, availability and accessibility of services (74, 75). Such a system produces health inequalities, where differences in socioeconomic status, gender, race or ethnicity between distinct groups in the country generate disproportion in terms of morbidity, mortality, and access to health services (76–78). The public healthcare system in Lebanon was difficult to access and afford even before Syrian refugees' arrival (75). However, with the influx of a significant number of Syrian refugees, the system has become further strained and refugees struggle to receive sufficient health services (75).

The results of our study show that Syrian refugee adolescent girls have inadequate information on SRH issues. The majority of participating girls did not have any knowledge about either menstruation or the physical changes associated with puberty before experiencing them. The lack of preparatory understanding made them go through stressful and frightening experiences. Similar results were found among very young adolescents displaced from Myanmar living in Thailand, where only one in three girls reported being knowledgeable about changes during puberty before they happened (16). Migrant and refugee women from various cultural groups who have resettled in Australia and Canada stated that they had no knowledge of menstruation before menarche and that they became aware of the role of menstruation only after their pregnancy (79).

According to the program of action adopted at the ICPD, one essential component of SRH is the individual right to obtain sufficient knowledge on sexual health (21). The SRH literacy status of an individual is affected by cultural, religious, and social factors in addition to the quality of the accessible healthcare facilities and services (80, 81); however, SRH literacy is mainly built through education and factual scientific knowledge. SRH literacy allows women to build up behavioral, existential, cognitive, and advocacy competences that lead to the decrease of gender and health inequalities concerning SRH (82–84). Adolescence is a sensitive phase accompanied by rapid physical and emotional changes and the mandate of new social roles, which can put adolescents under stress. However, a distinct vulnerability is experienced by adolescents in cases of forced displacement (85). The adolescent girls in this study talked about their particularly distressing experiences after reaching puberty. A qualitative study on the health of very young Syrian adolescents living in an urban and an ITS setting in the Lebanese Governorate of Bekaa showed that the participants had a poor comprehension of puberty (86). All adolescents worldwide encounter challenges when seeking information on SRH issues, but adolescent refugees' experiences of displacement create additional obstacles when searching and acquiring SRH knowledge (87). Interrupted education, divided families, incidents and extortions of sexual violence, and inadequate access to healthcare systems affect refugee adolescents' SRH literacy (87).

Adolescent girls in this study mentioned three kinds of accessible sources of SRH knowledge: individuals (e.g. mothers, female relatives, friends); institutions (e.g. schools, local and international NGOs); and media (e.g. YouTube). Similar to studies in other humanitarian settings in different regions, mothers were the main source of SRH information for adolescents (16, 88). However, the girls expressed their interest in having access to

additional knowledge from experts in the field of SRH in addition to their worries about not receiving sex education. Peers, media, and other informal sources are the predominant sources for SRH knowledge for young people, which enable the sharing of incorrect information and the generation of misconceptions (87, 89–91). The Syrian refugee girls who participated in this study had fewer opportunities to access information about SRH, since nearly 43% of them are experiencing disrupted schooling and 55% of them have never participated in NGO activities or training. Adolescent girls described myths concerning beneficial and harmful practices during menstruation in addition to traditions that help in controlling body changes during puberty. The misconceptions mentioned are the result of present cultural beliefs in the girls' communities or their misinterpretation of incomplete information, since they described feeling embarrassed to ask for information on SRH issues and their preference instead for self-made conclusions.

Our findings indicate the urgent need for accessible programs in Lebanon that deliver SRH knowledge to Syrian adolescents in general and Syrian girls in particular. However, this finding is most likely also transferable to other recipient countries in the region, including Lebanon, where adolescent girls' SRH and puberty experiences are overlooked in research (92). The scientific information should be presented in a clear, simple, and comprehensive way. The participants in this study who had the opportunity to participate in NGOs and scouts' educational events showed satisfactory knowledge about different SRH topics. They talked about their positive experiences receiving direct information that was explained and demonstrated to them via illustrations. Comprehensive sex education allows adolescents to acquire fundamental information about SRH issues and to develop decision-making skills that are essential when dealing with those issues (93). Schools are a key formal source for SRH knowledge, where students receive the information within a complete learning setting (79). In Lebanon, students learn partially about sex education as part of the biology curriculum (94). However, Lebanese adolescents, girls and boys equally, expressed their wish to receive a complete reproductive health education (95). A study demonstrated that Lebanese adolescents who received school lessons on reproductive health, showed more careful practices during their first sexual experience (96). A 2019 vulnerability assessment of Syrian refugees in Lebanon found that 69% of primary-school age Syrian children were enrolled in schools, whereas only 22% of secondary-school age Syrian children were enrolled. The main reasons for school dropouts were cost-related burdens, child labor, and marriage (65). It is essential to recognize these barriers when implementing humanitarian educational programs in order to make them accessible for adolescent refugees and to meet their SRH needs. The emotional health and socioeconomic factors that affect the everyday lives of Syrian adolescent girls in Lebanon should also be taken into account when designing intervention plans.

This study also shows the important role of mothers as an accessible and trusted source of SRH knowledge for adolescent girls. Thus, this existing key role should be acknowledged and developed by the working NGOs to be more effective. Firstly, it is necessary to provide refugee mothers with concrete information about SRH issues to share with their daughters and prevent them from sharing misconceptions. Secondly, it is fundamental to actively engage them in the learning process through their inclusion in the development and employment of educational programs offered by the different existing organizations. Such an approach with two phases of measures will encourage the mothers to start discussions on SRH topics with their daughters, with the accurate information needed. Previous studies have shown that refugee mothers in general and Syrian refugee mothers in Lebanon in particular express concern about not having adequate information about SRH subjects that they can deliver to their daughters. The mothers also request the facilitation of their education in order to be equipped with knowledge about SRH issues and to be able to communicate in a culturally suitable way with their adolescents (79, 86, 20). Social and cultural customs that consider conversations on SRH issues a taboo are the main obstacle for SRH literacy (90, 91, 97, 98). Syrian refugees in Lebanon are diverse, coming from various rural and urban regions in Syria, with different levels of education and cultural practices (20). This diversity should be recognized by the working actors in the humanitarian field, who should not perceive Syrian refugee girls and women as a homogenous group when designing and implementing intervention programs. Instead, they should provide them with knowledge that complements their individual learning and health needs. Plan International recommends working actors and service providers in Beirut and its suburbs collaborate in implementing programs that tackle the specific needs of adolescent girls, with the prioritization of the most vulnerable ones, in order to prevent duplication of interventions in some fields and neglect for other fields (12). Plan International also suggests designing intervention programs based on needs assessments that provide segregated data by sex, age, and disability. Reaching refugee communities in an urban setting is difficult. Therefore, there is a need to expand community outreach and awareness campaigns that inform adolescent refugee girls about available programs and services (12).

The participants reported their frequent exposure to different types of sexual harassment by fellow male refugees or males from the host community. The girls were harassed when in public areas, mainly in the streets, which they described as 'becoming ordinary'. The consistent harassment caused the girls to feel anxiety and fear, resulting in school absenteeism for some of them. Similar results were found among Syrian adolescent girls and young women living in a neighborhood in Izmir, Turkey, where displacement and changed social circumstances increased their exposure to violence and mainly to verbal, sexual, and physical street harassment (99). Previous studies done in Lebanon on the same issue showed that Syrian parents limited their adolescent daughters' mobility when unaccompanied due to safety concerns. In order to protect them from possible public sexual harassment and assaults, parents implemented strategies that had a negative impact on their adolescent girls, such as dropping out of school and child marriage (100, 101). Roupetz et al. (101) describe this as a continuous cycle of SGBV where some parents replace one type of violence with another. This also might explain the feeling of victimization among the participants in our study when reporting harassment to their parents, and their preference to endure harassment in order to attend school and have partial freedom of movement.

After displacement to a host country, women and girls often encounter social isolation and extreme financial need, which make them more vulnerable to sexual exploitation and assaults (102, 103). In addition to that, they face discriminations because of their nationality, ethnicity, race, language, class, gender, sexual orientation, and physical disability (15). It is key to recognize the complexity of urban settings and the types of risks present in them in order to design effective SGBV intervention programs. In its report "Mean Streets: Identifying and Responding to Urban Refugees' Risks of Gender-Based Violence", the Women's Refugee Commission identifies the common SGBV risks in four urban settings, including Beirut, which are associated to: livelihoods, shelter, urban isolation, fear of the police, and lack of access to justice (15). A study conducted in three different locations in Beirut, including Bourj Hammoud, found that migration status plays a major role in forming adolescent girls' attitudes towards the neighborhoods they live in and their feeling of safety there: 87% of Lebanese girls felt welcomed in their neighborhood whereas only 65% of Syrian girls felt the same (12). Finally, research and intervention programs should not overlook the composite and multilayered experiences of violence lived by Syrian refugee women in Lebanon by focusing only on gender relevant indicators (75). As Yasmine and Moughalian (2016) explain, microsystem (an individual's direct context and communication), exosystem (all types of institutions affecting an individual's behavior), and macrosystem (cultural perceptions and approaches) determinants should be closely examined to understand their effects on Syrian refugee women's SRH status in Lebanon. By adapting the social ecological model, Yasmine and Moughalian (2016) show that the conflicts occurring and pressures that exist related to Syrian refugee women's agency, along with Lebanese institutional constrictions, are the result of gendered roles and assumptions founded upon the micro-, exo-, and macro-systems' numerous layers (75).

In a very dense urban context like Bourj Hammoud, the high variation of Syrian refugees' legal status and therefore the legal precarity of their families was noted, which has a decisive health impact on adolescent refugee girls and young women. This very significant factor is noted and will be further investigated in a future publication.

Study Limitations

The study faced some challenges and limitations. Parents' disapproval of the research topic and their daughters' participation hindered access to the girls. SRH is a sensitive issue that is not welcomed for open discussions in the local community. Safety concerns in general and fear of sexual violence in particular may have restricted mobility for some girls to participate in the FGDs. Some refugee parents in Bourj Hammoud do not allow their daughters to be left unaccompanied when leaving the apartment or participating in an activity. This made access to Syrian refugee adolescent girls more difficult. During the FGDs, social pressure may have discouraged some participants from sharing their personal opinions and experiences on SRH, specially on more sensitive topics such as domestic and intrafamily violence. Furthermore, participants might have chosen specific answers that they thought the moderator or peers preferred. Finally, collecting data on such sensitive topic using multiple qualitative methods- such as observation, body mapping, and interviews- in different Lebanese urban contexts that are inhabited by refugees, would have given this study a deeper understanding of the refugee adolescent girls' SRH. However, this was not possible for our study due to capacity constraints of the study team when in the field in Lebanon.

Conclusions

This study provides insights on the SRH of Syrian adolescent girls living in an urban setting in Lebanon. Its findings present an understanding of the girls' perceptions, experiences, knowledge, practices, and concerns regarding their SRH. The girls appear to be in need of solid information about SRH issues, for example through accessible programs. Additionally, the role of mothers as trusted and accessible sources of information should

be recognized and supported by program developers in the field. The frequent exposure of girls to street sexual harassment should be understood within the complex setting of an urban area, along with the SGBV risks it presents, in order to offer interventions that reduce SGBV incidents.

Abbreviations
ASRH: Adolescent Sexual and Reproductive Health; ASRHR: Adolescent Sexual and Reproductive Health and Rights; FGD: Focus Group Discussion; EMENA: Extended Middle East and North Africa; IAFM: Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings; IAWG: Inter-Agency Working Group on Reproductive Health in Crises; ICPD: International Conference on Population Development, ITSs: Informal Tented Settlements; LCRP: Lebanon Crisis Response Plan; MHM: Menstruation Hygiene Management; MoU: Memorandum of Understanding; NGO: Non-governmental organizations; SGBV: Sexual and Gender-based Violence; SRH: Sexual and Reproductive Health; SRHR: Sexual and Reproductive Health and Rights; UNFPA: United Nations Population Fund; UNHCR: United Nations High Commissioner for Refugees.

Supplementary Information

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Additional file 1. Focus Groups Discussions Guide (45 min-1 h).

Additional file 2. A Sample of the Codebook's Schematic Representation.

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Authors' contributions
RK, OI and GF conceptualized and designed the overall study. RK was responsible for the data collection and analysis. OI and GF provided supervision during the data collection process. SH provided support on qualitative methodology practice and analysis. RK drafted the manuscript with contributions from OI, GF and SH. All authors read and approved the final manuscript.

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Availability of data and materials
The dataset and materials used in this study are available from the first author on reasonable request.

Declarations

Ethics approval and consent to participate
Ethical approvals for data collection were obtained from the Institutional Review Boards of Rafik Hariri University Hospital in Lebanon, as per advice of the Lebanese Ministry of Public Health, and the Faculty of Medicine at Ludwig-Maximilians-Universität in Munich, Germany (Project Nr. 19-552). The researcher explained the purpose of study to the parents and their daughters. One of the participants' parent gave Arabic oral and written informed consent and the participating girls gave Arabic oral and written informed assent.

Consent for publication
Not applicable since this manuscript does not contain any individual person's data in the form of image or video.

Competing Interests
The authors declare that they have no competing interests.

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Publisher's Note

4. Paper II

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Article

A Cross-Sectional Quantitative Study on Sexual and Reproductive Health Knowledge and Access to Services of Arab and Kurdish Syrian Refugee Young Women Living in an Urban Setting in Lebanon

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Abstract: Since data on the sexual and reproductive health (SRH) of young refugee women living in urban settings in Lebanon are particularly scarce, we aim through this exploratory study to assess the SRH knowledge and access to services of Arab and Kurdish Syrian refugee young women living in Bourj Hammoud. From January to March 2020, a cross-sectional survey was conducted among 297 Syrian Arab and Kurdish participants and aged 18–30 years old. It was found that participants coming from Syrian urban areas or who completed an education above secondary level have higher overall knowledge on SRH issues. Only a total of 148 out of the 297 participants (49.8%) knew a health facility in Bourj Hammoud that provides SRH services and among them 36.4% did not know which type of services are available there. The Syrian refugee young women's access to SRH services is inadequate due to different obstacles. The overall knowledge level on different SRH topics is limited. The context of multiple crises in Lebanon should be taken into consideration when delivering future SRH services.

Keywords: young women; refugee health; vulnerability; sexual and reproductive health; public health; urban setting; forced migration; Lebanon; Syria; cross-sectional survey

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1. Introduction

During the 21st century, the world experienced a considerable increase in the number of individuals who were forced to migrate due to conflicts, civil disorder, expulsion, and assault. The number of refugees and asylum seekers escalated from 17 to 34 million between 2000 and 2020, with half of it being composed of women and girls [1]. In 2021, 25% of the global refugees come from Syrian Arab Republic. Most of Syrian refugees are hosted by neighboring countries, where 19 out of 20 live in urban regions [2]. Lebanon is one of those countries, which hosts the worldwide highest number of refugees per capita [3]. The Lebanese Government did not allow the creation of camps as formal settings for Syrian refugees, who as a consequence became scattered across the country and inhabiting rented rooms, apartments, garages, and informal tented settlements (ITSs) [4–6]. Furthermore, 89% of Syrian refugee families in Lebanon live below the survival minimum expenditure basket (SMEB) defined in the country and experience distressing living conditions [7,8].

The armed conflict in Syria, which continues since 2011, did not only create a public health catastrophe within the country, but also critical public health challenges in the neighboring countries which received refugees [9]. The Lebanese healthcare system is inequitable, in large shares privatized, and is based on out-of-pocket payments [10,11].

With the arrival of Syrian refugees, the system became additionally strained with an excessive demand since its coverage had also to cope with disadvantaged Lebanese individuals, Lebanese citizens returning from Syria, Palestinian refugees that had to give up their settlements in Syria, and in general with an already pre-existing refugee population in the country consisting mainly of Palestinian refugees that arrived in the aftermath of the conflicts of 1948 and 1967 [12]. As a result, the refugees were left with restricted, insufficient, and hard to access services [10,13].

Previous research showed that young people and women experience additional hardships during conflicts and emergencies that lead to health deterioration [14,15]. Women and girls living in humanitarian settings tend to suffer from poor sexual and reproductive health (SRH) outcomes, which put them at increased risk of morbidity and mortality [16–19]. Furthermore, Syrian refugee women in Lebanon experience difficulties when seeking SRH services because of high service costs, absence of female healthcare providers, and discriminatory attitudes from providers [20,21]. A needs assessment has shown that only 32% of Syrian women within the reproductive age in Lebanon consider SRH services easily accessible, while 38% think that these services are practically unavailable and 17% are unaware that these services even exist [22]. Moreover, a situation analysis conducted in 2013 by the United Nations Population Fund (UNFPA) on youths in Lebanon, who are affected by the Syrian crisis, found that only 31% of refugee participants received health services, and 56% of those found the services satisfactory. The analysis also showed that Syrian youths had insufficient knowledge on SRH issues. For instance, only 45% of refugee youths self-declared knowledge of contraceptive methods, of whom one quarter indicated withdrawal as one of the methods [23].

Since data on the SRH of young refugee women living in urban settings in Lebanon are particularly scarce, the general aim of this exploratory study is to assess the SRH status of Arab and Kurdish Syrian refugee young women living in Bourj Hammoud. Its specific objective is to determine the knowledge of refugee young women on SRH issues such as sexually transmitted infections (STIs) and contraceptive methods on one hand and their access to SRH services such as ever visited health facility in Lebanon and healthcare provider characteristics on the other hand. The agenda of the International Conference on Population and Development (ICPD) and the *Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings* (IAFM) by the Inter-Agency Working Group on Reproductive Health in Crises (IAWG) form the framework of the study [17,24]. Its objective and results are in line with the Sustainable Development Goal (SDG) Number Three—*ensure healthy lives and promote well-being for all at all ages*—which also encompasses the necessity to advance reproductive, maternal, and child health [25]. This study complements a qualitative research, conducted previously by our team, in which qualitative insights on knowledge and experiences around SRH of Syrian girls aged between 13 and 17 years also living in Bourj Hammoud were provided [26]. Our findings are aimed at improving and focusing health promotion activities on SRH in refugee populations.

2. Materials and Methods

2.1. Study Setting

According to the United Nations High Commissioner for Refugees (UNHCR), 8141 Syrian refugees registered the industrial area of Bourj Hammoud as their place of residence [27]. The area has a history of accommodating refugees since the 1920s, where Armenians arrived after surviving genocide and escaping expulsion by Ottomans [28]. In the present, individuals with lower socio-economic status—including Lebanese citizens, Syrian, Palestinian, and Iraqi refugees, and migrant workers—reside in Bourj Hammoud [29,30]. The suburb, which is one of the most heavily inhabited in the Middle East, suffers from inadequate living conditions such as unsatisfactory infrastructure, hygiene conditions, and supply of electricity and clean drinking water [28,31].

2.2. Study Design

We employed a cross-sectional survey to explore the SRH knowledge of refugee young women and their experiences in accessing services. The questionnaire consisted of five sections: demographic characteristics (e.g., age, ethnic group, level of education); displacement characteristics (e.g., year of fleeing, reason of fleeing, and duration of stay in Bourj Hammoud); individual agency in displacement (e.g., head of household, healthcare decision making power); SRH knowledge (e.g., sources of information, knowledge on contraceptive methods and STIs); experiences in accessing SRH services (e.g., ever visited health facility in Lebanon for SRH services, healthcare provider characteristics); and experiences of pregnancy (e.g., number of pregnancies and antenatal care visits in Lebanon). The questionnaire's different parts were developed based on two validated tools: Reproductive Health Assessment Toolkit for Conflict-Affected Women, CDC, 2007 [32] and Adolescent Sexual and Reproductive Health Toolkit for Humanitarian Settings, UNFPA and Save the Children, 2009 [33]. The questionnaire was designed in English, translated into Arabic, and piloted before the start of the data collection.

2.3. Sample Participants

We calculated a sample size of 297 and managed to enroll 305 Syrian refugee young women. The sample size was determined based on Cochran's (1963) formula for cross sectional studies with a precision of 5% and a confidence level of 95% [34]. The prevalence of self-claimed knowledge of contraceptive methods among Syrian refugee girls and young women from previous studies was adopted [23,35]. Snowball sampling was used to recruit participants. When conducting research that includes hidden groups such as vulnerable refugee communities, snowball sampling method is found to be the most suitable [36,37].

Five different snowball starting points were applied through five Syrian female community gatekeepers. In order to avoid a homogenous sample and to ameliorate representation, gatekeepers belonging to various age and ethnic groups, coming from different areas in Syria, and having distinct socio-economic characteristics (e.g., education level and monthly income) were chosen. Additionally, we allowed only a limited number of participants from each resulting chain [38,39]. The efficiency of engaging gatekeepers in the recruitment procedure for research on sensitive topics that involve refugee communities as participants has been previously reported [40,41]. The inclusion criteria of respondents were: bearing Syrian nationality, belonging to Arab or Kurdish ethnic groups, age between minimum 18 and maximum 30 years, and date of arrival to Lebanon only after the start of the armed conflict in Syria (set at 15 March 2011). Eight questionnaires were excluded from the study, since their corresponding participants moved to Lebanon before 15th of March 2011. Since snowball sampling was implemented, there is no means to estimate the number of individuals who refused to participate in the study.

2.4. Data Collection

Data collection was carried out from January to March 2020 by the first author—a Lebanese female doctoral researcher, who is an Arabic native speaker. Data collection was completed using a tablet computer, on which the questionnaire was programmed employing the Magpi® application. Data were collected one-on-one in a private environment, either in the participants' or in the gatekeepers' apartments.

2.5. Data Analysis

Data were analyzed using IBM SPSS Statistics version 27.0.(International Business Machines Corporation, New York, NY, USA) A descriptive presentation of the results of the questionnaire is given for continuous variables that are non-normally distributed through interquartile range (IQR) and medians. Since none of the variables were normally distributed, standard deviation (SD) and means were not calculated. Tests of associations were conducted for categorical variables using Fisher's exact test, since the study's sample size, and in consequence size of cells, is considered small [42,43]. The Chi-square test

was used to check for significant differences between proportions across categories (SRH service categories). A threshold of significance was set at 0.05. No data were missed.

In order to evaluate the overall knowledge of participants on SRH issues, an unweighted score was generated for every participant based on her knowledge on different SRH topics, as reported by Ivanova et al. [44] in a comparable study in Uganda: STIs, symptoms of STIs, methods of contraception, and danger signs of pregnancy. Each of these elements were assessed through a scale from zero to three. After combining the evaluation from the four elements and getting the final average score, the overall knowledge on SRH issues was described as following: low (average score ≤ 1), medium (average score between 1 and 2), and high (average score ≥ 2) [44].

2.6. Ethical Considerations

Before administering the structured questionnaire, the researcher explained the aim and relevance of this study to participants, who also learned about their right to participate on a voluntary basis and to withdraw their participation at any time. Written Arabic informed consent was received from participants. In case of illiterate participants, oral Arabic informed consent was received in the presence of a witness. The Institutional Review Boards of Rafik Hariri University Hospital in Lebanon and the Faculty of Medicine at Ludwig-Maximilians-Universität in Munich, Germany, provided the ethical approvals for this study (Project Nr. 19-552).

3. Results

3.1. Demographic and Displacement Characteristics of Participants

Two hundred and ninety-seven (297) young women participated in the survey. The median age of participants was 25 years (IQR: 21–29), with 72.7% of them being Syrian Arab and 27.3% being Syrian Kurdish. The young women arrived from 11 out of 14 Syrian governates (administrative districts in Syria), with the majority (n = 162; 54.5%) coming from Aleppo and only one participant coming from Latakia. The distribution of participants between the different governates is presented in Figure 1. The vast majority of participants were married (n = 268; 90.2%). A total of 51.2% (n = 128) of young women had acquired an education below secondary level and 48.8% (n = 145) of them completed an education above secondary level. A total of 89.9% (n = 267) of the participants had a monthly income, while the rest of the young women (n = 30) were not receiving any income for the last three to five months, since the beginning of the economic crisis in Lebanon. Most of the young women (n = 131; 44.1%) received a monthly income of USD 100-399. More than half of the participants (n = 159; 53.5%) lived in urban areas before arriving to Lebanon, while the rest lived in rural areas (n = 138; 46.5%). The largest proportion of participants indicated to be living as refugees between 5 and 10 years, be it in Lebanon (n = 174; 58.6%), or more precisely in Bourj Hammoud (n = 137; 46.1%). Fear and security concern was the most frequent given reason for fleeing (n = 217; 73.1%), followed by economic difficulties (n = 35; 11.8%), reunification with a husband (n = 31; 10.4%), and lack of daily necessities (n = 14; 4.7%). The median number of individuals sharing the same place of residence with the participants was 5 (IQR: 4–8), with 2 being the median number of adults (≥18 years of age) and 3 the median number of children (<18 years of age) in residence. The detailed demographic and displacement characteristics of the participating Syrian refugee young women are presented in Table 1.

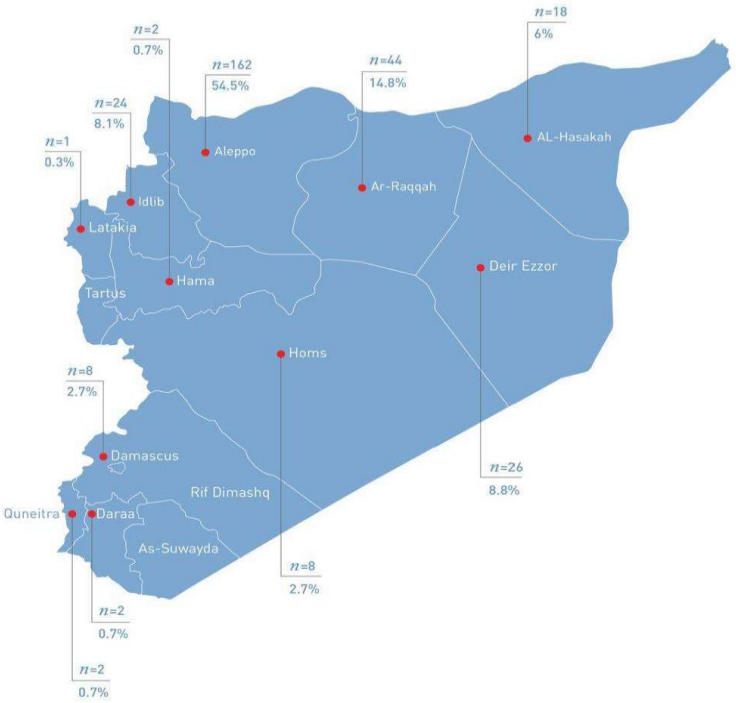

Figure 1. Distribution of participants (n = 297) by governates of origin in Syria.

Table 1. Demographic and Displacement Characteristics of Participants.

	Number (n = 297)	Percentage (%)
Individual Characteristics		
Age		
18–24 Years	145	48.8
25–30 Years	152	51.2
Ethnic Group		
Arabs	216	72.7
Kurds	81	27.3
Educational Level		
Never attended school	24	8.1
Primary	128	43.1
Secondary	90	30.3
Tertiary	36	12.1
University	13	4.4
Vocational training	6	2
Marital Status		
Single	17	5.7
Engaged	3	1
Married	268	90.2
Divorced	7	2.4
Widowed	2	0.7
Income		
No income	30	10.1
<USD 100	13	4.4
USD 100-399	131	44.1
USD 400-600	107	36
>USD 600	16	5.4

Table 1. *Cont.*

	Number (n = 297)	Percentage (%)
Displacement Characteristics		
Lived Before Fleeing Syria		
In a village	138	46.5
In a city	159	53.5
Reason of Fleeing		
Security concerns/fear	217	73.1
Lack of daily necessities	14	4.7
Economic difficulties	35	11.8
Reunification with husband	31	10.4
Live in Lebanon for		
Less than 1 year	14	4.7
1–4 years	109	36.7
5–10 years	174	58.6
Live in Bourj Hammoud for		
Less than 1 year	38	12.8
1–4 years	122	41.1
5–10 years	137	46.1
Head of Household		
Self	13	4.4
Husband	241	81.1
Parent	16	5.4
Other Relative	27	9.1

3.2. *Individual Agency in Displacement*

For most of the participants (n = 241; 81.1%), the husband was the head of the household. That was followed by a relative (n = 27; 9.1%) or a parent (n = 16; 5.4%). Only 13 out of the 297 young women were themselves the head of their household. Most of the participants were financially dependent on their husbands (n = 250; 84.2%), while some others depend on family members (n = 33; 11.1%). Only 14 out of the 297 young women were financially independent through a job they had in Bourj Hammoud. None of the participants depended on a direct support by UNHCR or a non-governmental organization (NGO). We asked the young women about the decision maker in their household when it comes to their healthcare, mobility, work and participation in workshops, and physical appearance. Most of participants had their own last say when it comes to decisions regarding their mobility (n = 115; 38.7%), ability to work or participate in workshops (n = 115; 38.7%), and physical appearance (n = 167; 56.2%). However, the biggest percentage of young women (n = 102; 34.3%) had to make a joint decision with their husband/partner for issues related to their own healthcare. In case the decisions were not made independently or jointly, the husband/partner or another relative (e.g., mother or mother-in-law) was the final decision maker. An overview of the results is presented in Table 2. We also asked the young women about the final decision maker regarding the household's daily purchases. Most participants (n = 99; 33.3%) were the decision makers on that regard, followed by the husband/partner (n = 86; 29%), a joint decision with the husband/partner (n = 66; 22.2%), and another relative (n = 46; 15.5%). When having a closer look only among married participants (n = 268), we also found that the majority of the young women made independent decisions regarding their mobility (n = 106/268; 39.5%), work and participation in workshops (n = 106/268; 56%), physical appearance (n = 150/268; 56.6%), and household's daily purchases (n = 91/268; 40%), but had to make a joint decision with their husband or partner regarding their own health (n = 102/268; 38%).

Table 2. Final decision maker in household on matters that concern the young women.

Decision Maker \ Matter	Healthcare	Mobility	Work/Participation in Workshops	Physical Appearance
Self	85	115	115	167
Husband/partner	84	106	103	66
Joint decision with husband/partner	102	50	54	49
Other relative	26	26	25	15
Total	297	297	297	297

3.3. SRH Knowledge and Sources of Information

The participants approached multiple people when seeking information on SRH issues. The majority of them reached to female relatives other than their mother and sister (n = 92), followed by friends (n = 77), partner or husband (n = 65), mother (n = 64), sister (n = 53), doctor or nurse (n = 40), educational provider (n = 2), and male relative (n = 1). Only eight participants wished to reach to someone else. A total of 134 out of 297 (45.1%) participants also looked for similar information through different online channels, such as YouTube (n = 89/134; 66.5%), Google (n = 35/134; 26%), and social media (e.g., Facebook and Instagram; n = 10/134; 7.5%).

We evaluated the knowledge of participants on different SRH topics: STIs, symptoms of STIs, methods of contraception, and danger signs of pregnancy. A total of 161 out of the 297 participants (54.2%) were not able to identify any STI, while 61 out of the 297 participants (20.5%) were not able to name any symptom associated with STIs. Among participants who were knowledgeable about these two issues, HIV/AIDS (n = 136/136; 100%) and genital itching (n = 167/236; 70.7%) were the most STI and related symptom mentioned. The vast majority of Syrian refugee young women (284; 95.6%) knew at least one method of contraception. Birth control pills (n = 268/284; 94.3%), IUD (n = 266/284; 93.6%), and withdrawal (n = 257/284; 90.5%) were the three most identified methods by the knowledgeable young women. Most of the participants (n = 231; 77.7%) could name at least one danger symptom which is associated with pregnancy. Vaginal bleeding (n = 199/231), intense abdominal pain (n = 123/231), and fever (n = 116/231) were the three most known symptoms. An overview of the young women's SRH knowledge is presented in Table 3 and a detailed demonstration of that knowledge on the four topics is enclosed in supplementary (Tables S1–S4).

In bivariate analyses using Fisher's exact test, no association was found neither between the overall knowledge on SRH and age (p= 0.387) nor between the same overall knowledge and duration of stay in Lebanon (p= 0.90). However, the overall knowledge on SRH issues was found to be associated with the type of setting in which the Syrian refugee young women lived before being displaced to Lebanon ($p < 0.001$) in addition to their level of education ($p < 0.001$). Participants coming from Syrian urban areas were more likely to have a higher overall knowledge on SRH issues compared to participants who inhabited rural areas. Furthermore, Syrian refugee young women who acquired an education below secondary level tended to have a poorer knowledge on SRH topics compared to the ones who completed an education above secondary level.

Table 3. Sexual and Reproductive Health Knowledge of Participants.

	Number (n = 297)	Percentage (%)
Knowledge of STIs		
0	161	54.2
1	83	27.9
2	31	10.4
3 or more STIs	22	7.4
Knowledge of STIs Symptoms		
0	61	20.5
1	37	12.5
2	64	21.5
3 or more symptoms	135	45.5
Knowledge of Contraception		
0	13	4.4
1	11	3.7
2	14	4.7
3 or more methods	259	87.2
Knowledge of Pregnancy's Danger Signs		
0	66	22.2
1	53	17.8
2	68	22.9
3 or more signs	110	37

3.4. Access to SRH Services

We assessed the medical check-ups and procedures received by the participants during their stay in Lebanon. The majority of the young women had at least one general check-up by a gynaecologist (n = 233; 78.5%) and one blood test (n = 197; 66.3%). Only 27.6% (n = 82) of them had at least one check-up by a general practitioner and 15.5% (n = 46) of them received at least one vaccination. Very few participants (n = 26; 8.8%) reported that they had at least one pap smear during their stay in Lebanon. A total of 28 out of the 297 participants (9.4%) did not receive any medical check-up or procedure during their displacement to Lebanon. Most of the participants (n = 240; 80.8%) visited at least once a health facility in Lebanon to receive SRH services. They knew about it through a friend (n = 108/240; 45%), a relative (n = 106/240; 44.2%), a healthcare provider (n = 15/240; 6.2%), or an NGO worker (n = 9/240; 3.7%). Only two young women could not remember how they came to know about the facility and its offered services. The last visit for the majority of participants was for receiving pregnancy care and delivery (n = 156/240; 65%), followed by STIs treatment and counselling (n = 33/240; 13.75%), family planning services (n = 21/240; 8.75%), and education or counselling regarding different SRH topics (n = 11/240; 4.6%). In addition, 19 out of the 240 participants (7.9%) visited lately a health facility to receive other SRH services such as hormonal therapy and infertility treatment. All the young refugee women talked to a medical doctor, except one participant who talked to a midwife. A female healthcare provider delivered the needed SRH service for the majority of participants (n = 174/240; 72.5%). The young women described the healthcare provider as friendly and helpful (n = 195/240; 81.3%), unfriendly and disrespectful (n = 22/240; 9.2%), friendly but unhelpful (n = 19/240; 7.9%), and unexperienced (n = 4/240; 1.6%). The biggest percentage of young women (n = 177/240; 73.7%) would return again to the health facility. The reasons for not returning for the rest of them are presented in Figure 2.

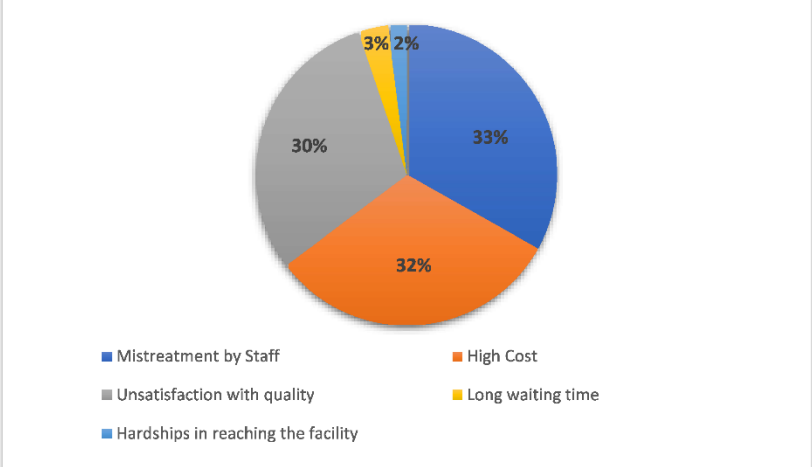

Figure 2. Reasons for not returning to the health facility.

When asked about their preferred sex of service provider, 52.2% (n = 155) of the total participants favoured females and 1.3% (n = 4) favoured males. A noticeable percentage of the young women (n = 138; 46.5%) did not have any preference.

Only half of the participants (n = 148; 49.8%) knew a health facility in Bourj Hammoud that provides SRH services. There was no significant association between familiarity with a SRH care provider on the one hand and number of years lived in Bourj Hammoud, bearing head of household position, income level or healthcare decision making power on the other hand. When being asked about the type of services available at the facility, 36.4% (n = 54/148) of the young women did not have any answer. We examined the awareness of the participants regarding the availability and accessibility of five different categories of SRH services in Bourj Hammoud and its neighbouring urban areas. More than half of the participating young women knew where to access health services that are related to general medical diagnosis, information on SRH issues, methods of contraception, STIs treatment, and antenatal care. The results are presented in Figure 3. We tested for significant differences in existing knowledge on service availability between the five SRH categories using the Chi-square test. That allowed us to check in case the difference is statistically significant. The participants indicated significantly higher knowledge on the service categories of general medical diagnosis (p = 0.006) and antenatal care (p < 0.001), in contrast to information on SRH issues (p = 0.270), methods of contraception (p = 0.685), or STIs treatment (p = 0.92).

3.5. Experiences of Pregnancy

A total of 236 out of the 297 young refugee women (79.5%) reported their experience of pregnancy during their stay in Lebanon. The median number of pregnancies was two (IQR: 1–3). Furthermore, 89 out of the 236 participants (37.7%) stated to have suffered a miscarriage, where 18 reported more than one miscarriage. Almost all participants who experienced pregnancy in Lebanon (n = 227/236; 96.2%) received antenatal care. The majority of them (n = 172/227; 75.8%) had three or more antenatal visits during their last pregnancy. For the same last pregnancy in Lebanon, 53.8% (n = 127/236) of the young women wanted to become pregnant then, 33.9% (n = 80/236) preferred to wait longer before becoming pregnant, 11.9% (n = 28/236) did not want to become pregnant anymore, and one participant had no response to the question.

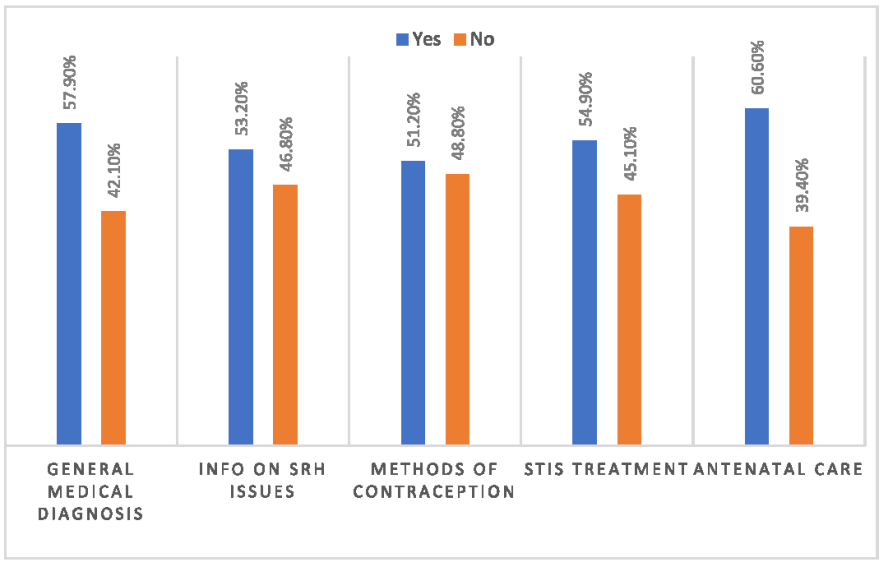

Figure 3. Awareness of the participants on available and accessible health services in Bourj Hammoud and its neighbouring urban areas.

4. Discussion

This cross-sectional quantitative study assessed the general SRH status of Arab and Kurdish Syrian refugee young women living in Bourj Hammoud, Lebanon, and determined their knowledge on SRH issues and access to SRH services. Its findings show the Syrian refugee young women limited overall SRH knowledge and insufficient access to needed services within their urban setting of residence specifically and in Lebanon as a host country generally.

In our study, a low number of participants (46 out of 297) received immunization. A similar finding was reported in 2013 among pregnant Syrian women living in different Lebanese urban areas, where only 8.0% of women were vaccinated against tetanus [45]. Immunization of mothers is key to prevent maternal, neonatal, and young children morbidity and mortality [46,47]. Additionally, vaccination of girls and young women against the human papillomavirus (HPV) prohibits cervical cancer. In 2018, almost 90% of the deaths caused by this disease took place in low- and middle-income countries [48]. A very limited number of participating young women (8.8%) had at least one pap smear during their displacement to Lebanon. According to the Centers for Disease Control and Prevention (CDC), women having the age between 21 and 29 years should receive one pap smear every three years in case of a normal test. This important screening tool, which detects malignant and premalignant lesions of the cervix, allows an early diagnosis of cervical cancer [49].

Among the participants who visited a healthcare facility in Lebanon, 65% accessed SRH services that are related to pregnancy care and delivery. This was also observed in an assessment conducted in Lebanon only a year after the start of the Syrian conflict, where 59.7% of the displaced women never visited a gynaecologist if not for pregnancy care or delivery [22]. The insignificant variance in the presented numbers throughout the prolonged Syrian crisis highlights the need to increase the awareness among refugees on all available SRH services at reduced prices on one hand and their locations of availability on the other hand. Additionally, it is necessary to extend the awareness through refugee's different networks, including social media [50]. Syrian refugee young women living in Bourj Hammoud reported different barriers that limit their access to available SRH services. Mistreatment by staff, high cost, poor quality of services, long waiting times, far distances, and unaffordable means of transport were the obstacles mentioned by participants. Comparable barriers are

observed in Syrian refugee populations in Jordan and Turkey [51,52], in addition to other displaced populations such as refugee adolescent girls in the Nakivale refugee settlement in Uganda [44]. Surprisingly, and in contrary to other studies on Syrian refugee women in Jordan and Turkey [35,53,54], the sex of the healthcare provider was not named as a barrier to SRH services access. Differently, a recognizable percentage of participants (46.5%) did not have any preference concerning the sex of service provider. Some of the participants described healthcare providers by disrespectful, unhelpful, and unexperienced, and expressed their unsatisfaction with the quality of received SRH services. These reports reflect the participants' major concerns regarding the skills of the healthcare provider on one hand and the sufficiency of SHR services on another hand, and not in respect to the sex of healthcare provider. It is true that more than half of the participants knew where to go to receive health services in Bourj Hammoud and its neighbouring urban areas, however the percentage of Syrian young women who do not know where to have this access is still considered elevated (ranged between 39.4 and 48.8%). This emphasizes once more time the necessity to expand the awareness among refugees on available SRH services-such as receiving information on SRH issues, methods of contraception, STIs treatment, and antenatal care. Although there was no significant association between familiarity with a SRH care facility and the healthcare decision making power, it is essential to further examine the effect of the women's dependent decisions on their own SRH status, especially that the majority of participants (34.3%) had to make a joint decision with their husband or partner.

The participants had limited overall knowledge on four SRH topics: STIs, symptoms of STIs, methods of contraception, and danger signs of pregnancy. Their knowledge on at least one contraception method was the highest (95.6%), followed by at least one symptom of STIs (79.5%), at least one danger sign of pregnancy (77.7%), and at least one STI (45.8%). Although neither age nor duration of stay in Lebanon were found to affect the participants' overall level of knowledge, this knowledge seems to depend on Syrian refugee young women's education level and type of setting in which they lived before being displaced to Lebanon. According to McKay, women cannot have a SRH care decision making power if they are not provided with precise and comprehensive information in the first place [55]. Women from lower social class receive less information because of the healthcare providers' assumption that they are not able to comprehend scientific knowledge [55]. In this study, HIV was found to be the most known type of STI. A similar finding was reported among Syrian refugee mothers in Jordan [56]. The considerable national and international awareness campaigns on HIV, which is not the case for other STIs, could be the cause behind that [56]. Interestingly, participants had acceptable knowledge on STIs symptoms but could not identify most of the STIs. This could be due to the tightly connected social networks of refugees, through which Syrian women exchange information that focus on sharing personal experiences, specially that friends, relatives, and partners or husbands were the main sources of information for the vast majority of participants.

Although almost all participants were knowledgeable of at least one method of contraception, 45.8% of women who experienced pregnancy in Lebanon had low or no desire for their last pregnancy. Thus, there is a gap between the level of knowledge on contraceptive methods on one hand and the actual use of these methods on another hand. Some studies reported a restricted level of contraceptive use within the population of Syrian refugee women in Lebanon, which ranged from 42.3 to 65.5% [22,45]. A qualitative study on Syrian refuge women in Turkey found that participants had sufficient knowledge on modern contraceptive methods but could not identify their efficiency [57]. Therefore, the very high level of knowledge on contraception methods among the participants of this study can be a result of an over-reporting, where women are only aware of the methods' names but not of their functions and effectiveness.

SRH started to be incorporated in the humanitarian responses and programs that tackle different types of crises since the 1990s [58,59]. These programs, and regardless of their application level, should be designed based on the particular context of each country

in which they will be implemented [60]. In case of extended crises, such as the Syrian armed conflict that has been lasting for the past 10 years, healthcare systems become fragile which negatively affect the health status of women [13,61,62]. It is essential to describe and recognize the present complex and multi-layered Lebanese context, in order to better understand its impact on the well-being of Syrian refugees in general and the SRH of Syrian refugee women in specific. Lebanon is experiencing several complex crises since October 2019: economic breakdown, political unsteadiness, the COVID-19 pandemic, and the explosion at the Port of Beirut on the 4th of August 2020 [63]. These crises were added to the vulnerable conditions of refugees as a result of the conflict in Syria [63,64].

The economic crisis, which started in October 2019 and its effects were slightly witnessed during the data collection of our study, is considered one of the three worst economic crises worldwide since the mid-19th century [63]. A drastic increase in the unemployment rate, one of the crisis' consequences, was reflected in the findings of the study, where 30 participants have not received any income since October 2019. The protracted financial and political crisis hinders the providing of crucial public services, including health services, and thus impairs the well-being of individuals [63]. According to Médecins Sans Frontières (MSF), the increase in the inflation rate to 133% by November 2020 distressed Lebanese citizens as well as refugees and obstructed their capability to access satisfactory healthcare services [64]. Furthermore, the economic crisis pushed at least half of the Lebanese population under the national poverty line [63]. In an already inequitable, stretched, and remarkably privatized healthcare system, the crisis generates additional obstacles to access healthcare services and cause the health deterioration of already vulnerable groups [64]. These populations will have to put first their family's life saving needs such as food and shelter before their own SRH needs [65]. In a phone survey conducted by the World Food Program (WFP), 36% of households reported barriers in accessing health care between November and December 2020, a percentage that increased from 25% between July and August 2020 [63].

The Lebanese public healthcare system was also stressed due to the increasing number of COVID-19 patients starting of spring 2019. An assessment conducted by the Interagency Sexual and Gender-based Violence (SGBV) before the 4th of August 2020 to study the pandemic's effect on the level of SGBV throughout the country, found that 51% of the participating women and girls, including Syrian refugees, feel less safe and only 30% of them are still accessing health services [66]. Finally, the blast at the Port of Beirut impaired six main hospitals in addition to 23 primary health care centers and caused the loss of medical supplies in different types of healthcare settings: primary, secondary, and tertiary [67]. Since this study's data collection phase took place between January and March 2020, its results do not show the serious effects of the Lebanese multiple crises. All these events might contribute to further worsening the SRH of Syrian refugee women and are expected to continue in doing so.

The combined effect of the several crises on Syrian refugee young women's SRH status, knowledge, and access to available services should be investigated in depth in order to complement the new needs of women who are experiencing an increased vulnerability. The evaluation of the existing services and programs should also be performed to determine their level of suitability and sufficiency vis-à-vis to the necessary requirements to avert poor SRH outcomes, specially that no clear plan is being drafted on the governmental level to resolve the different crises.

We recognize the different limitations of this study. First of all, the researcher was not able to always assert the reported age of participants based on available official documents. Second, the self-reporting conducted by participants might have caused over- or under-reporting, especially with the effect of social desirability bias. Moreover, the study's sample is non-representative, since no random sampling method was applied. However, and since the aim of our exploratory study is to have insights into the SRH of refugee young women living in an urban setting, which is overlooked in research, representation was not the preference [68,69]. The study on a sensitive topic such as SRH, participants' anxiety about

the research intentions, and restrictions when building connections and trust within the Syrian refugee community living in Bourj Hammoud presented challenges when recruiting participants and thus limited women's participation and representation. Finally, the cross-sectional type of the study did not allow an investigation of the changes in the participants' SRH knowledge and access to services at different points in time during their displacement to Lebanon.

5. Conclusions

Syrian refugee young women residing in Bourj Hammoud have restricted access to SRH services and unsatisfactory overall knowledge on different SRH topics. Thus, it is necessary to expand the awareness among refugee women on all affordable and available SRH services in urban settings and not to only focus on refugees' maternal health. Provision of information on variety of different SRH issues and treatment of STIs are some of those services that are still inadequate. Furthermore, an effective intervention targeting these challenges should always be designed according to the context of the setting in which it will be implemented. Such a design will assure constructive outputs, where refugee women's SRH status is enhanced.

This study provides valuable primary data on the SRH knowledge and access to services among young refugee women living in an urban setting, which makes them a hard-to-reach group. The findings could guide future research on specific SRH components of Syrian refugee women in Lebanon in specific and of other young refugee populations in the extended Middle East and North Africa (EMENA) countries in general. Such research is highly needed in Lebanon in order to shape the work of national, international, governmental, and non-governmental institutions that support this target group through SRH services, especially within a context of multiple crises that are expected to further deteriorate the SRH status of Syrian refugee women and lead to urgent poor SRH outcomes.

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/ijerph18189586/s1, Table S1. Identified STIs among Knowledgeable Participants (n = 136); Table S2. Identified STIs Symptoms among Knowledgeable Participants (n = 236); Table S3. Identified Methods of Contraception among Knowledgeable Participants (n = 284); Table S4. Identified Danger Signs of Pregnancy among Knowledgeable Participants (n = 231).

Author Contributions: R.K., O.I. and G.F. conceptualized and designed the overall study. R.K. was responsible for the data collection and analysis. O.I. and G.F. provided supervision during the processes of data collection and reviewing of results. R.K. drafted the original and following versions of the manuscript, with contributions from O.I. and G.F. All authors have read and agreed to the published version of the manuscript.

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