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Sexual and Reproductive Health Needs and Priorities of the Adolescents in Northern Pakistan: A Formative Evaluation

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Abstract: The vast majority (90%) of the world's young people aged 10–24 years live in low and middle-income countries (LMICs). Pakistan has one of the world's largest populations under 30 years. Adolescents' access to basic sexual and reproductive health (SRH) services, such as family planning and sexuality education, remains low, especially in rural areas such as the Gilgit-Baltistan (GB) province of Northern Pakistan. This study addressed these gaps by exploring the SRH priorities and health information needs of adolescents living in GB. A cross-sectional survey was conducted with adolescents and healthcare providers. A total of 216 adolescents and 22 healthcare providers completed the survey forms. The findings pointed out that adolescents in GB have unmet SRH needs and are more interested in learning about SRH, human immunodeficiency virus (HIV) and sexually transmitted infections (STIs), and sexual abuse. The majority of the participants highlighted that their age, fear of being judged/stigmatized, and society's attitude toward sex hinder them from opting for SRH services. The majority of healthcare providers reported that they are not well-equipped to tackle SRH-related issues and require training to better serve the adolescent SRH needs. The findings from this study have highlighted that there is a need to formulate robust interventions and strategies to raise knowledge and awareness about SRH needs among adolescents.

Keywords: adolescents; sexual and reproductive health; Gilgit-Baltistan; Pakistan



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1. Background

Adolescents (aged 10–19 years) comprise one-sixth of the world's population and account for 6 percent of the global burden of disease and injury [1]. The vast majority (90%) of the world's young people aged 10–24 years live in low- and middle-income countries (LMICs) [2]. Adolescence is a foundational phase for establishing the physical, emotional, cognitive, and social capabilities essential for adult life. It is when lifelong health behaviors are formed and future health trajectories take shape. Sexual and reproductive health (SRH) is an important aspect of adolescents' health and well-being and interconnects with various aspects of physical, mental, and social well-being [3,4]. The WHO defined sexual health as "a state of physical, emotional, mental, and social well-being related to sexuality" [5]. The National Consensus on Adolescent Sexual Health additionally emphasized that, for adolescents, these dimensions are closely linked with "sexual development and reproductive health, as well as physical and social well-being" [6].

Pakistan has one of the world's largest populations under 30 years (68%) [7] and the highest total fertility rate (3.6 children per woman) in South Asia [8,9]. Approximately 50% of all births in Pakistan occur among girls younger than 20 years, mostly living in rural areas [9]. This has implications for maternal and perinatal morbidity and mortality levels in the country, as adolescent mothers are at higher risk for complications, eclampsia, puerperal endometritis, and infections [10]. At the same time, their newborns are more likely to be born prematurely and have low birth weight [10]. The prevalence of early

marriage among girls is an important contributing factor to high levels of teen pregnancy, maternal morbidity, and mortality and places girls at a significant disadvantage compared to boys [11]. Close to 15% of 15-19-year-old girls were married in 2018 compared to 3% of boys in Pakistan [8]. Access to basic SRH services, such as family planning and sexuality education for adolescents, remains low, especially in remote rural areas in the country, such as Gilgit-Baltistan province [12]. One of the five provinces in Pakistan, Gilgit-Baltistan (formerly known as 'the Northern Areas') is situated at the geostrategically sensitive border area between Pakistan, China, India, and Afghanistan and covers 72,400 square kilometers, is comprised of ten administrative districts and is home to approximately 1.8 million people [13]. The region is situated at the intersection point of the world's largest mountain ranges, the Himalayas, the Hindukush, and the Karakoram, making for challenging terrain, particularly during winter. In 2017, around 7% of women in Gilgit-Baltistan aged 20-24 years reported being married before 15 years, while almost 30% reported being married before reaching 18 years [13]. The highest unmet need for family planning in Pakistan [8]. According to the country's most recent Demographic & Health Survey data, only 30% of married women (15–49 years) reported modern contraceptive use in Gilgit-Baltistan. Despite 70% of the population being under 25 years in Gilgit-Baltistan [14], data on reproductive health needs, access to information, and levels of service use by adolescents in this province of Pakistan are scarce.

Despite many adolescent populations living in remote rural areas of Northern Pakistan, research on SRH information needs and access to SRH services is nearly non-existent. This study addressed these gaps by exploring the SRH priorities and health information needs of adolescents living in Gilgit Baltistan (GB), Northern Pakistan. This study aimed to examine the SRH knowledge, information needs, and access to SRH services among adolescents in GB, Pakistan. The specific objectives were to understand the SRH knowledge, needs, and priorities among adolescents in GB, Pakistan; their access to SRH information and the barriers to accessing SRH information and services; their preference for modes of SRH learning and information; and their experiences on adolescent-friendly SRH services in GB, Pakistan.

2. Methods

A cross-sectional survey was conducted to assess the SRH information needs, level of knowledge, and current state of available SRH services for adolescents in GB, Pakistan. Survey questions asked the youth about their SRH knowledge, sources of information, their information needs, the availability of SRH services, and barriers to accessing those services. A cross-sectional survey was also conducted with healthcare providers working in government and private hospitals in GB to identify the type of SRH services available for adolescents in GB and if the healthcare facilities provide adolescent-friendly SRH services. Toronto Teen Survey (TTS) guided the development of the adolescent survey questionnaire (Appendix A, adolescent SRH Survey), and the healthcare provider survey was adapted from the WHO quality assessment toolkit [15]. (Appendix B Healthcare Providers survey). The survey forms were pilot-tested on 5% of eligible participants to ensure that participants understood the questions accurately before implementing the full survey.

2.1. Participants and Sampling

Study participants were adolescents (boys and girls ages 15 to 19) and healthcare providers currently living in GB, Pakistan. While the developmental stage of adolescence encompasses a broad age range between 10 and 19 years, we recruited adolescents aged between 15 and 19 years because they are generally mature enough to answer survey questions and meet the minimum age requirement of 15 years to use social media platforms. Adolescent participants were recruited from community settings and government and private schools in GB. Flyers describing the study were posted on the school's notice boards and Facebook page. In addition, community workers hired as part of this project assisted in participant recruitment. Healthcare providers were recruited from government health

facilities in GB. Six schools in central GB provided the approval to recruit participants from their schools. Two hundred sixteen surveys were collected from adolescents and 22 from healthcare providers from various healthcare facilities in central GB.

2.2. Recruitment Procedure

After obtaining permission to access the population and ethical approval to conduct the study, the research assistants (RAs) were hired as part of this project. They visited the classes of participants aged between 15–19 years. The nature of the study was explained to students in the class using a fixed script. RAs left the survey forms at the school administrative desk in an opaque envelope. Participants interested in participating picked up their survey questionnaire from the administrative desk and were asked to return the survey forms sealed in an opaque envelope at the administrative desk. The RAs picked up the forms from the administrative desk. The time required to complete the survey form was approximately 30–40 min. Written consent was not required/requested, as participants were informed that completion of the survey was considered implied consent for participation in the study.

Recruitment posters were posted on the government hospital's notice board to recruit healthcare providers. RAs visited healthcare facilities for four weeks to recruit participants. Participants were asked to fill out the survey forms and return the completed survey forms sealed in an opaque envelope at the administrative desk. The RAs picked up the forms from the administrative desk.

2.3. Data Analysis

Using SPSS version 23.0, data were entered twice to ensure accuracy in the data entry protocol. Each survey form was numbered, and 10% of all instruments (forms) were randomly picked (every 10th form) and manually checked against the existing database. A descriptive analysis was conducted for the demographic variables and the other variables of interest, as all the variables were measured at the nominal scale. Percentages were calculated for participants' knowledge of different aspects of SRH, and charts/graphs were prepared where required.

The study received ethics approval from the Ethics Review Board of the participating university and administrative approval from government private schools and government health facilities to recruit the participants. Participants were informed that participation in the study was completely voluntary. Confidentiality was ensured using code numbers. Participants were apprised that the findings would be used in publications and presentations.

3. Results

3.1. Adolescent Sexual and Reproductive Health

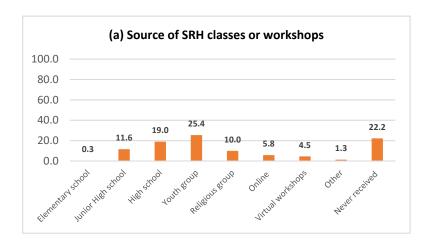
A total of 216 adolescents with a mean age of 17.67 \pm 2.42 years, grades 11–12 (58.8%), and mostly females (79.4%) participated in the study. The most commonly spoken local language was Burushaski (40.6%), followed by Urdu (32.8%), and English (12.8%). Most participants were living with family (88.8%) and had parents who attained their education to up to Grade 10 (mothers 46.9% and fathers 34.6%) (Table 1). While assessing the sexual activity of the participants, 3.8% reported having sex, 1.7% of the girls reported getting pregnant, and 1.0% got someone pregnant (Table 1).

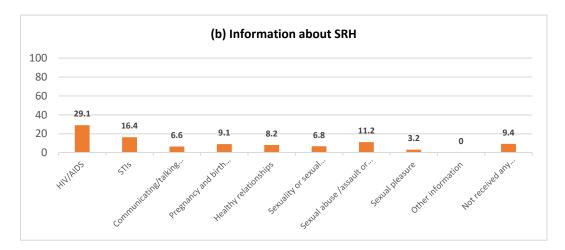
For SRH information and sources, most of the adolescents received information from youth groups (25.4%) and high school (19%) (Figure 1a). They were taught information related to HIV/AIDS (29.1%), STIs (16.4%), sexual abuse (11.2%), etc. (Figure 1b). Most of the adolescents reported referring to friends (21.3%) and media (17.6%) in cases where they had questions related to SRF, and very few referred to doctors/nurses (14.1%) and parents/caregivers (13.5%) (Figure 1c). Their preferred reported sources are books (14.6%) and family members (13.3%), and they require more information on HIV/STIs (23.9%), healthy relationships (18.5%), contraceptives (17.2%), etc. (Figure 1d,e).

Table 1. Adolescents' socio-demographics characteristics (n = 216).

Demographic Characteristics	n (%)
Age (n = 214)	4
Mean age	17.67 ± 2.42
Gender $(n = 213)$	10 (20 1)
Male Female	43 (20.1) 170 (79.4)
	170 (79.4)
anguages are most often spoken in your home (n = 436) Burushaski	177 (40.6)
Shina	42 (9.6)
Wakhi	16 (3.7)
Urdu	143 (32.8)
English	56 (12.8)
Others	2 (0.5)
Education $(n = 215)$	F (2.2)
Grade 7-8 Grade 9-10	5 (2.3) 42 (19.4)
Grade 11–12	127 (58.8)
Post-secondary school (e.g., college, university, etc.)	42 (19.4)
Parents Education Status	
Mother level of education ($n = 213$)	
Less than High School	100 (46.9)
High School	44 (20.7)
College/University Don't know	44 (20.7) 25 (11.7)
Father level of education $(n = 211)$	25 (11.7)
Less than High School	73 (34.6)
High School	52 (24.6)
College/University Don't know	66 (31.3) 20 (9.5)
	20 (9.3)
Any disability? (n = 216) Yes	15 (7.4)
No	200 (92.6)
Are you living with? $(n = 15)$	
Learning disability	4 (26.7)
Mental health problems (e.g., depression)	5 (33.3)
Problems with drugs	2 (13.3)
Problems with alcohol Mobility impairment	1 (6.7) 0
Hearing impairment	2 (13.3)
Speech impairment	0
Visual impairment	1 (6.7)
HIV/AIDS	0
Who do you live with? $(n = 216)$	102 (00.0)
With family	192 (88.8)
Alone/roommate My boyfriend/girlfriend or partner	12 (5.6) 1 (0.5)
Friend	0
At least one parent	0
Extended family/other relatives	1 (0.5)
Shelter/hostel	10 (4.6)
Sexual activity	
Ever had sex (n = 212) Yes	8 (3.8)
No	185 (87.3)
No comment	19 (8.9)
Ever got pregnant (for girls) $(n = 178)$	- · · ·
Yes	3 (1.7)
No No comment	172 (96.6) 3 (1.7)
Ever gotten someone pregnant? (for boys) $(n = 101)$	3 (1.7)
Yes	1 (1.0)
No	100 (99.0)
No comment	0

Of all participants, 2.8% referred to SRH services for HIV testing, while 8.4% for hormones (Figure 2a). The majority of the time (44.8%), adolescents are referred to a specialist (obstetricians and gynecologists), followed by a walk-in clinic (32.8%) and a family doctor (15.5%) (Figure 2b). The common barriers that stopped the adolescents from accessing SRH services were that they thought they were too young (18%), fear of being judged (13.6%), and society's attitudes towards sex (11.23%).





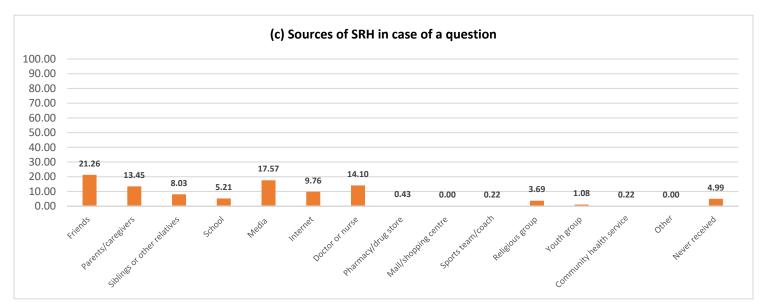


Figure 1. Cont.

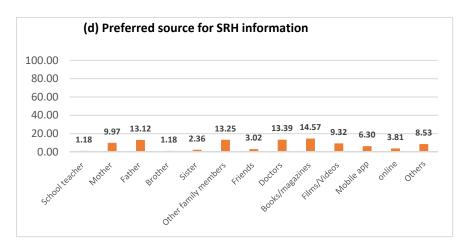


Figure 1. Adolescents Sexual and Reproductive Health Information.

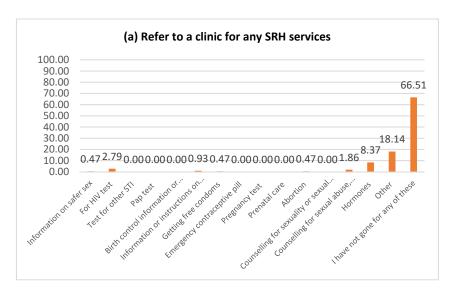
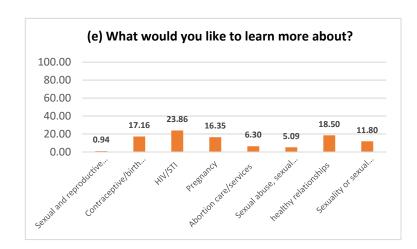
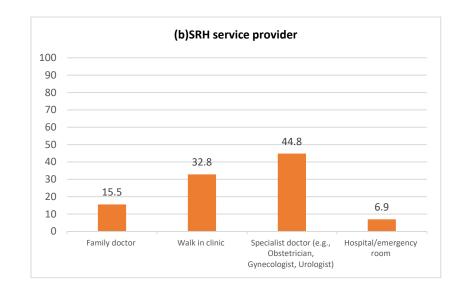


Figure 2. Cont.





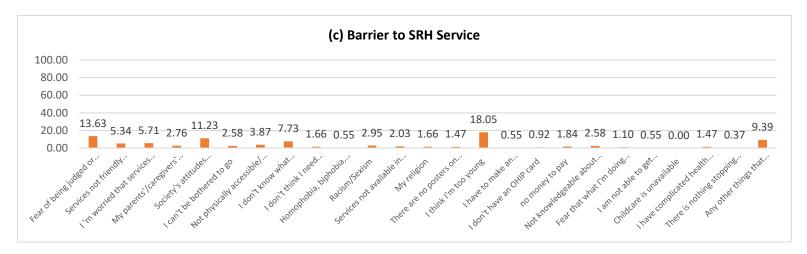


Figure 2. Adolescents SRH services utilization.

Figure 3 depicts adolescents' responses regarding the friendliness of SRH services. The majority of adolescents agreed on statements including that the services were private and confidential, the waiting room was friendly, the sensitivity of staff towards adolescent gender, and their availability for assessment.

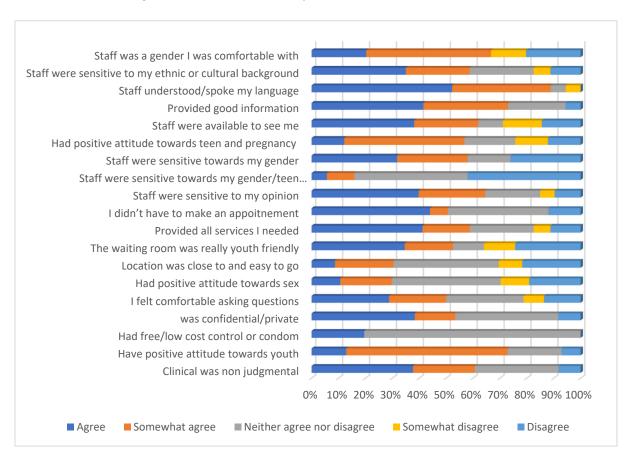


Figure 3. Adolescents' Experiences of Adolescent-Friendly Sexual and Reproductive Health Service.

The survey form also included an open-ended question to allow the participants to provide free-text comments on issues related to SRH and access to SRH services. Below we present a summary of some of the narratives that most participants reported in the free-text comment section.

- Due to cultural barriers, people don't discuss sexual or reproductive health issues and face more problems regarding [SRH-related] things (n = 6);
- Sexual health education and knowledge should be provided at our educational institutions. As girls, we must know about the importance of sexual health. We want to know about sexual health issues through different camps and sessions in schools or colleges (*n* = 105);
- We need to ensure the staff and services are sensitive to LGBT people and provide the [youth] information about healthy sexuality (n = 5);
- We our parents should be trained and support their children to talk about sexual health issues with them without any pressure. It will be good if parents get education on healthy sexuality (n = 18).

We want sexual health resources to be more public and readily available (n = 6).

3.2. Healthcare Providers

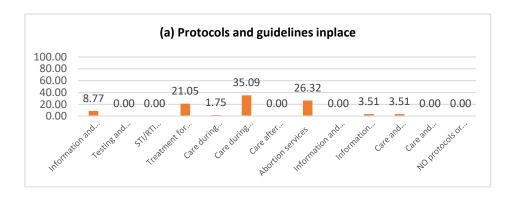
A total of 22 healthcare providers participated, most of whom were females (81.8%), nurses/midwives (54.5%), and had an average of 11 years of experience (Table 2). 19 healthcare workers reported that their healthcare facility provided adolescent-friendly SRH

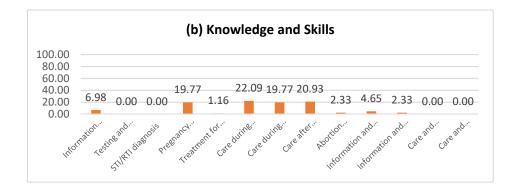
services, and of these, 15 reported ensuring maintained privacy during the visit (Table 2). The common sites where youth was referred for the healthcare services included CMH Gilgit (n = 22), DHQ (n = 12), AKHSP (n = 4), and either Islamabad or Karachi (n = 2). All healthcare providers reported giving enough time for consultations and felt the need for healthcare providers to be trained in providing SRH services to adolescents in their communities (Table 2).

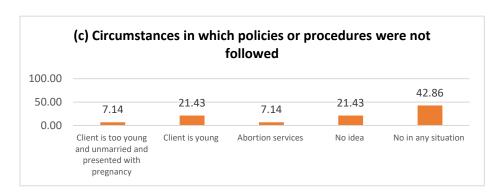
Table 2. Healthcare providers Demographic characteristics (n = 22).

Demographic Characteristics	n (%)	
Gender (<i>n</i> = 22)		
Male	4 (18.18)	
Female	18 (81.81)	
Years of experience	11.4 ± 12.7	
Type of healthcare provider $(n = 22)$		
Doctor	3 (13.63)	
Nurse	6 (27.27)	
Nursing assistant	1 (4.54)	
Midwife	6 (27.27)	
Pharmacist	1 (4.54)	
Other	5 (22.72)	
Provision of adolescent-friendly SRH services at the facility $(n = 22)$		
Yes	19 (86.36)	
No	3 (13.63)	
Ensuring privacy at health care facility $(n = 21)$		
Yes	15 (71.42)	
No	6 (28.57)	
Referral to other facility in the case when service is		
not available $(n = 40)$		
AKHSP	4 (10)	
CMH Gilgit	22 (55)	
DHQ	12 (30)	
Islamabad/Karachi	2 (5)	
Provision of sufficient time for adolescent		
clients. $(n = 20)$		
Yes	20 (100)	
No	0	
Importance of SRH service delivery training $(n = 22)$		
Yes	22 (100)	
No	0	

The services provided to the youth included care during childbirth (35.1%), followed by abortion care (26.3%) (Figure 4a). Health care providers informed having skills and knowledge related to pregnancy diagnosis (19.8%), care during pregnancy (22.1%), child-birth (19.8%), and after childbirth (20.1%) (Figure 4b). The circumstances in which the healthcare workers reported not following the procedures and policies mostly included the child's young age (Figure 4c). When asked about the reasons for denied services by the adolescent, the characteristics included being female (32.5%), very young, aged less than 11 years (25%), disabled (20%), emergency cases (15%), and unmarried (7.5%) (Figure 4d). The type of SRH services offered to adolescents by health care providers is provided in Figure 4e.







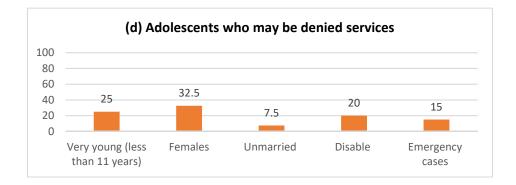


Figure 4. Cont.

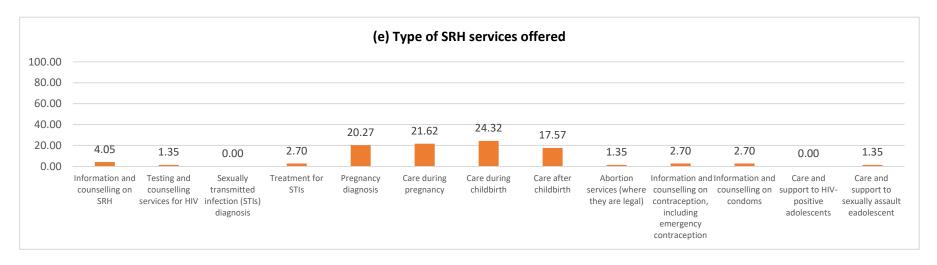


Figure 4. SRH Service provision by health care providers.

4. Discussion

In the free-text comment section, many of the healthcare providers reported:

• We think SRH education should be mandatory in every school and college to make students aware; in hospitals, there should be services available regarding sexual health issues (n = 4).

• There should be proper counseling for adolescents, and more sessions should be conducted in schools and colleges using multi-media and books to be fully aware of everything (n = 1).

The findings from our study have highlighted the SRH needs of the adolescent population living in GB, Pakistan. The results from this study underscored that sexual activity is not a common practice amongst the teenage population from GB. This is consistent with the earlier findings from a report on Asian and Pacific countries that highlighted that only 1% of the adolescent population has had sex before marriage in South Asian countries, including Pakistan [16]. Our study pointed out that adolescents' access SRH information mainly from youth groups and friends and are more interested in learning about HIV, STIs, and sexual abuse. The findings are consistent with the report presented by UNESCO that states the need to address HIV-related concerns in the adolescent population; however, it is not fully achieved because of the social stigma [17]. Other factors that hinder HIV-based strategies include policy-related factors, including the inclusion of sex education in the school curriculum, lack of resources, and school-level barriers [18].

Most adolescents reported going to a friend and using the internet/media to seek SRH information and avoided seeking help from healthcare professionals and older family members. Though the idea of digital literacy in SRH is not a novel concept, it holds many concerns about the credibility and authenticity of the adolescent population's information from online media sources [19]. Since adolescents, particularly young adolescents, are not intellectually robust, they are vulnerable to unauthentic content and misinformation [20]. However, the use of the internet for such purposes is still at its peak due to easier accessibility and approach [21]. Another study highlighted that healthcare professionals and parents are not the preferred sources of contact in obtaining SRH-related information; of those who do, most of them are girls [22]. The main reason highlighted for not referring to parents for SRH knowledge is because of the socio-cultural and traditional taboos attached; the parent-child communication on sexual matters is considered unacceptable in many Asian countries. Other reasons include lack of SRH knowledge in parents, gender discrimination, cultural beliefs, and faith that directly hinder building open communication about the subject matter [23].

Moreover, many adolescent participants mentioned that they do not seek healthcare services for the SRH; of those who do, most of them seek them for hormonal purposes only. The findings are a bit contradictory to a study conducted in Kenya. In the Kenyan adolescent population, the participants acknowledged the importance of hormonal therapies such as contraceptives. However, they highlighted that adolescents perceived this to be reserved for married only and are reluctant to seek hormone services [24]. Most of the participants highlighted that their age, fear of being judged/stigmatized, and society's attitude toward sex hinder them from opting for SRH services. Similar barriers were identified by studies highlighting a range of barriers to accessing SRH [25,26]. These included lack of knowledge and education about the available services, shame as part of culture's negative perception, society's attitude towards pre-marital sex, fear of them being caught by their parents for seeking these services, and lack of privacy and confidentiality provided by the healthcare providers [25,26]. This shows that the services offered by the healthcare providers are not user-friendly [26], which varied from the findings of our study in which the adolescent population stated that the services were private and confidential. The lack of SRH education can also be attributed to the children's socioeconomic status. A study conducted in Sindh on HIV knowledge and belief highlighted that the children educated at least at a secondary level and allowed to meet their friends had significantly higher HIV knowledge than those with lower education [27].

Regarding the healthcare provider's perception, the majority of them felt that they were not well-equipped to tackle SRH-related issues and thus required consultation training to better serve the adolescent SRH needs. These findings are consistent with a study conducted in Cape Town in which nurses highlighted that they are not skilled enough to address the SRH-related concerns of the adolescent population. However, few also highlighted that healthcare system constraints such as lack of time hamper providing the care required by the teenage population [28]. Of those who highlighted that they could provide the services, the majority of those were skilled in providing antenatal care. This highlights that the healthcare providers in GB, Pakistan, can address reproductive needs but are poorly equipped to tackle the sexual needs of the adolescent population. Literature supports the idea that though nurses consider responding to the adolescent's SRH needs, many face difficulty initiating the conversation. Some highlight that the discussion based on sexual health is a prime responsibility of parents rather than the healthcare providers [29]. This results in the lack of service provisions, especially those related to contraception and abortion; they have widely accepted that they lack the skills to address the SRH needs of the unmarried adolescent population as a whole [30,31].

Amongst the many barriers, the young age of the adolescent population was highlighted by most of the healthcare providers in addressing the SRH needs. The findings are consistent with a study that highlighted that the person's age seeking SRH services does matter in the provision of services offered to them [32]. This gives rise to the importance of adolescent-friendly services. As part of the WHO global consultation on 'adolescent-friendly health services, three basic aims need to be considered, and at least one should be achieved. These include providing a supportive environment, improving the overall knowledge, attitude, and behavior, and increasing the uptake/utilization of the healthcare services [33,34].

To the best of our knowledge, this is the first study from GB that has assessed the needs and capability of SRH knowledge and service delivery. Moreover, these findings can serve as a basis for bringing attention to the stakeholders and policymakers in proposing SRH-related services available and accessible for the adolescent population of GB. Despite the strengths, our study has fewer limitations. First, the study lacks representation from GB as most of the participants recruited were from central parts of GB because we received approval from schools located in these areas only. Similarly, it lacks representation of health care workers providing services in other parts of GB. Second, the sample was one of convenience, and most of the participants were female. Therefore, sampling bias may have existed, limiting generalizability. In addition, testing bias may have been a factor in this study, as participants may understand and interpret the questions differently. Moreover, self-report questionnaires may be affected by participants' moods and attitudes and thus impact their completion, which may, in turn, result in low external validity of the study.

5. Conclusions

The adolescent population has unique SRH needs that remain unmet primarily due to a lack of awareness and knowledge, societal stigma attached to accessing SRH services by young people, policies and laws that prevent the provision of abortion and contraception use by the unmarried adolescent population, and the negative judgmental behavior of the healthcare professionals. This study's findings have highlighted a need for adolescent-friendly SRH services in GB, Pakistan. The fact that the adolescent population prefers friends and the internet as a medium for accessing SRH-related information rather than healthcare providers needs close attention. This populace must be given access to accurate knowledge about the SRH services and provided the autonomy to make informed choices to foster the SRH needs of the adolescent population. The adolescent population must be empowered to identify their SRH needs and attend to those needs regardless of their age, gender, and marital status.

Given adolescents' social and biological vulnerability to high-risk sexual behaviors, STIs, and less access to SRH services, it would be prudent to access appropriate sexual

health services before they become sexually active. Healthcare providers should consider developing age-appropriate outreach models to reach young people and provide appropriate age-related SRH education, information, and decision-making skills. There is a need to inform all young people on the types of sexual health services available in their community, confidentiality policies and legislation, navigating the health care system, and the location of linguistically accessible services. There is a strong need to introduce capacity-building programs for teachers related to comprehensive sex education and how they can integrate the aspects of sexual health education into their teaching methodologies and practices. In addition, it is important to involve parents in providing sexual health education to young people. Healthcare providers should give parent-focused programs that can raise parents' awareness of the importance of SRH for their young children. In addition to this, there is a need to formulate robust interventions and strategies to raise knowledge and awareness about SRH needs.

Author Contributions: S.M. conceived and co-designed this study. S.M. and K.A.R. conducted Survey. Z.S.L. and K.A.R. led the analysis. S.M. drafted the manuscript. All authors commented on all drafts of the paper. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki, and approved by the University of Alberta Ethics Review Board (Pro00108530, 10 May 2021).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy and ethical restrictions.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A. Adolescent Sexual and Reproductive Health Survey

Арр	oendix A.1. Section One: Persona	ıl Information	
1.	How old are you?		
2.	Are you? (please check a	all that apply)	
	○ Female ○ Male	○ other	
3.	What languages are most of	ten spoken in your home?	
	1. ———		
	2. ———		
	3. ———		
4.	What grade are you in?		
	• Grade 9	Grade 10 Grade 11	
	• Grade 12 I	don't go to school	
	 Post-secondary school ((e.g., college, university, etc.)	
5.	What level of education hav	e your parents/caregivers com	pleted?
	My mother has completed:		
	Less than High School——	High School——	College—
	University——	I don't know——	O
	My father has completed:		
	Less than High School——	High School——	College—
	University——	I don't know——	
	My other caregiver (if applic	able) has completed:	
	Less than High School——	High School——	College—
	University——	I don't know——	

- 6. Who do you live with? (Please check all that apply)
 - With family
 - Alone/roommate
 - My boyfriend/girlfriend or partner
 - Friend
 - At least one parent (including adopted parents, stepparents, and caregivers)
 - Extended family/other relatives
 - Shelter/hostel
- 7. We understand that "having sex" means different things to different people. In your opinion, have you had sex?
 - Yes No Not sure
 - 7a. Have you ever been pregnant? (for girls)
 - Yes No Not sure
 - 7b. Have you ever gotten someone pregnant? (for boys)
 - Yes No Not sure

Appendix A.2. Section Two: Getting Sexual and Reproductive Health Information

- 8. Please check all of the places you have had sexual health classes or workshops.
 - Elementary school (Kindergarten to Grade 6)
 - Junior High school (e.g., Grade 7–9)
 - High school (Grade 10–12)
 - Youth group (please specify)
 - Religious group (i.e., mosque)
 - Online
 - Virtual workshops
 - Other
 - I have never received sexual health classes or workshop
- 9. What kind of things have you learned about? (check all that apply)
 - Information on HIV/AIDS
 - Information on sexually transmitted infections
 - Information on communicating/talking about sex
 - Information on pregnancy and birth control options
 - Information on health relationships
 - Information on sexuality or sexual orientation
 - Information on sexual abuse/assault or sexual violence
 - Information on sexual pleasure
 - Other information (please specify)
 - I have not received any sexual health information
- 10. What would you like to learn more about? (check all that apply)
 - Information on communicating/talking about sex
 - Information on healthy relationships
 - Information on pregnancy and birth control options
 - Information on sexuality or sexual orientation
 - Information on HIV/AIDS
 - Information on sexually transmitted Infections
 - Information on sexual pleasure
 - Information on sexual abuse/assault or sexual violence
 - Other information (please specify)
 - I don't want to learn more about sexual health

11.	Where do you go when you have a question about sexual health stuff? (Please check all that apply)
	• Friends
	• Parents/caregivers
	Siblings or other relatives
	• School
	 Media (books, magazines, TV, movies)
	• Internet Please specify web site (e.g., Google or sexualityandu.ca):
	Doctor or nurse
	Pharmacy/drug store
	Mall/shopping centre
	• Sports team/coach
	Religious group (i.e., mosque)
	Youth group Please specify:
	 Community health service or clinic Please specify:
	Other place/person Please specify:
	I have never received sexual health information
12.	Please check the top three places you would most like to go when you have a question about sexual health? (Please check THREE only)
	• Friends
	• Parents/caregivers
	Siblings or other relatives
	School D Media (books, magazines, TV, movies)
	 Internet D Doctor or nurse
	Pharmacy/drug store
	Mall/shopping centre
	• Sports team/coach
	Religious group (i.e., mosque)
	Youth group Please specify:
	Community health service or clinic Please specify:
	Other place/person Please specify:
13.	How and from whom would you like to receive information about sexual and repro-
	ductive health? (Please check all that apply)
	School teacher
	• Mother
	 Father

- Brother
- Sister
- Other family members
- Friends
- Doctors
- Books/magazines
- Films/Videos
- Mobile app
- online
- Other (please specify)

Appendix A.3. Section Three: Sexual and Reproductive Health Services

- 14. Have you ever gone to a clinic for any of these things? (Please check all that apply)
 - Information on safer sex
 - For HIV test

- Test for other sexually transmitted infections (e.g., Syphilis, Chlamydia, Gonorrhea, Genital herpes)
- Pap test (sometimes called a pap smear)
- Birth control information or prescriptions (e.g., getting on the pill)
- Information or instructions on condoms
- Getting free condoms
- Emergency contraceptive pill (sometimes called 'the morning after pill')
- Pregnancy test (not a home pregnancy test)
- Prenatal care
- Abortion
- Counselling for sexuality or sexual orientation
- Counselling for sexual abuse, sexual assault or sexual violence
- Hormones
- I have not gone for any of these
- 15. Have you ever been to any of these places for sexual health services? (Please check all that apply)
 - Family doctor
 - Walk in clinic
 - Specialist doctor (e.g., Obstetrician, Gynecologist, Urologist)
 - Hospital/emergency room (please specify where)
- 16. Tell us what you thought about your visits to clinics for sexual health stuff. Circle how much you agree or disagree with the following statements.

I have never received sexual health services at a clinic. (Please go to question 22) $1 = Agree\ 2 = Somewhat\ Agree\ 3 = No\ opinion\ 4 = Somewhat\ Disagree\ 5 = Disagree\ NA = Doesn't\ apply\ to\ me$

a) Clinic was nonjudgmental	1	2	3	4	5	NA
b) Had positive attitude towards youth	1	2	3	4	5	NA
c) Had free/low-cost birth control or condoms	1	2	3	4	5	NA
d) Was confidential/private	1	2	3	4	5	NA
e) I felt comfortable asking questions	1	2	3	4	5	NA
f) Had positive attitude towards sex	1	2	3	4	5	NA
g) Location was close by or easy to get to	1	2	3	4	5	NA
h) The waiting room was really youth-friendly (e.g., had good music or magazines)	1	2	3	4	5	NA
i) Was physically accessible (e.g., wheelchair accessible)	1	2	3	4	5	NA
j) Provided all the services I needed	1	2	3	4	5	NA
k) I didn't have to make an appointment	1	2	3	4	5	NA
l) Staff were sensitive to my religion	1	2	3	4	5	NA
m) Had positive attitude towards gay, lesbian, bisexual and transgender people	1	2	3	4	5	NA
n) Staff were sensitive towards my gender	1	2	3	4	5	NA
o) Staff had positive attitude towards teen pregnancy and parenting	1	2	3	4	5	NA
p) Staff were available to see me	1	2	3	4	5	NA
q) Provided good information	1	2	3	4	5	NA
r) Staff understood/spoke my language	1	2	3	4	5	NA
s) Staff were sensitive to my ethnic or cultural background	1	2	3	4	5	NA
t) The staff was of a gender I comfortable with/I was able to choose the gender of my clinical staff	1	2	3	4	5	NA

17. Of the list of things in question 22, what are the three most important things you want in a sexual health clinic? List the three corresponding letters (e.g., list the letter 'g' for "Location was close by or easy to get to")

- 18. Which of these might stop you from going to a clinic for your sexual health? (Please check all that apply)
 - Fear of being judged or embarrassed by my friends
 - Services not friendly towards youth
 - I'm worried that services aren't confidential (i.e., kept secret)
 - My parents'/caregivers' reactions
 - Society's attitudes towards sex
 - I can't be bothered to go
 - Not physically accessible
 - Location is far away
 - I don't know what services or information I need
 - Fear of being judged or embarrassed by staff
 - I don't think I need services or information
 - Homophobia, biphobia, transphobia
 - Racism
 - There is no one of my race or ethnicity that works there
 - Sexism
 - Services not available in my language
 - I don't know where to go to get services
 - My religion
 - There are no posters on the wall that look like me or relate to my experience
 - I think I'm too young
 - I have to make an appointment
 - I don't have an OHIP card
 - I have no money to pay
 - Not knowledgeable about my disability
 - Fear that what I'm doing is against the law
 - I am not able to get hormones
 - Childcare is unavailable
 - I have complicated health needs. If comfortable please specify:-
 - There is nothing stopping me
 - Any other things that might stop you that you can think of:
- 19. What are the four most important things you need information on? (Please check FOUR only)
 - Sexual and reproductive health
 - Contraceptive/birth control information
 - HIV
 - Sexually transmitted infections
 - Pregnancy
 - Abortion care/services
 - Sexual abuse, sexual assault or sexual violence
 - Other (please specify) _______
- 20. What are the three most important things we could do to help YOU get the sexual health info you need? (Please check THREE only)
 - Make sexual health resources more public
 - Recognize that sexuality and sex is important

- Make sure services are physically accessible
- Provide confidential services
- Parent education on healthy sexuality
- Make sure there are enough resources to reach all youth
- Outreach to youth instead of waiting for youth to receive services
- Make sure that staff are sensitive to my religion
- Recognize that youth are sexually active
- Have youth involved in peer sexual health education
- Provide services in my language
- Make sure staff and services are sensitive to my culture or ethnicity
- Increase hours that the clinic is open
- Make sure staff and services are sensitive to Gay, Lesbian, Bisexual and Transgender people

21.	Is there anything else that you would like to tell us?
	Adopted from: Toronto teen Survey [35] Thanks so much for filling out our survey!

Appendix B. Health-Care Provider Survey on Sexual and Reproductive Health for Adolescents

Demographics:

- 1. Sex of health-care provider:
- 2. How many years have you worked at health care facility? _____
- 3. What are your areas of responsibility in healthcare facility?
- 4. Circle the type of health-care provider:
 - a. Doctor b. Nurse c. Nursing assistant d. Midwife e. Other:

Adolescent-friendly health services:

1. Does the health care facility you are working in provide adolescent friendly sexual and reproductive health services?

Yes ——		
No	(If No Then	skip Q 2-8)

- 2. Are adolescent clients offered the following reproductive health services at your health facility?
- a. Information and counselling on reproductive health, sexuality and safe sex
- b. Testing and counselling services for HIV
- c. Sexually transmitted infection (STIs) diagnosis
- d. Treatment for STIs
- e. Pregnancy diagnosis
- f. Care during pregnancy
- g. Care during childbirth
- h. Care after childbirth
- i. Abortion services (where they are legal)
- j. Information and counselling on contraception, including emergency contraception
- k. Information and counselling on condoms
- 1. Care and support to HIV-positive adolescents
- m. Care and support to adolescent clients who have been physically or sexually assaulted
- 3. Are there certain policies or procedures at your healthcare facility that might restrict the provision of sexual and reproductive health services to some groups of adolescents,

such as those who are less than a certain age; those who are not married; young unmarried girls/boys

	If so, could you describe what these policies or procedures are? Can you list the characteristics of some adolescents who may be denied services?
1	
3	
5	
4.	Health-care providers treat all adolescent clients with equal care and respect, regard less of status.
a. b.	Are there some groups of adolescents who you do not feel comfortable dealing with (e.g., those less than a certain age, those who are unmarried)? If so, could you explain why you feel uncomfortable?
5.	Does your healthcare facility have policies and procedures are in place that guarantee the confidentiality and privacy of adolescent clients in this health facility?
Yes	
No_	
6.	Are there any circumstances in which you would not follow any of these policies or procedures? a. If so, could you explain?
7.	Does the health service delivery at your health care facility ensures privacy?
Yes	
	Are you ever interrupted by other staff when providing services to adolescent clients?
	—————
	Is it possible for other people to hear your conversations or counselling sessions with
	lescent clients?
8.	How long do clients (adolescents) have to wait before they see a health-care provider
9.	If some/any services are not available at your health facility, do you know how and where to refer clients for these services?
10.	Health-care providers have the required competencies to work with adolescents and to provide them with the required health services. Do you believe that you have adequate knowledge and skills to provide health services to adolescent clients in the following areas?
a. b.	Information and counselling on reproductive health, sexuality and safe sex Testing and counselling services for HIV
c. d.	STI/RTI diagnosis Prognancy diagnosis
	Pregnancy diagnosis Treatment for STIs
e. f.	Care during pregnancy
	Care during pregnancy Care during childbirth
g. h.	Care after childbirth
i.	Abortion services (where they are legal)
	Information and counselling on contraception, including emergency contraception
j. k.	Information and counselling on condoms
l.	Care and support to HIV-positive adolescents

Care and support to adolescent clients who have been physically or sexually assaulted

m.

11. Health-care providers use evidence-based protocols and guidelines to provide health services. Please indicate whether you use protocols and guidelines at your health facility for the following health services:

- a. Information and counselling on reproductive health, sexuality and safe sex
- b. Testing and counselling services for HIV
- c. STI/RTI diagnosis d. Pregnancy diagnosis
- d. Treatment for STIs/RTIs
- e. Care during pregnancy
- f. Care during childbirth
- g. Care after childbirth
- h. Abortion services (where they are legal)
- i. Information and counselling on contraception, including emergency contraception
- j. Information and counselling on condoms
- k. Care and support to HIV-positive adolescents
- l. Care and support to adolescent clients who have been physically or sexually assaulted
- m. There are NO protocols or guidelines available to provide these health services to adolescents at my health facility.
- 12. Health-care providers are able to dedicate sufficient time to work effectively with their adolescent clients. In your opinion, do you think you have enough time for your consultations with your adolescent clients?
- 13. Do you think health care providers should be trained to provide sexual and reproductive health services to adolescents in your community?

If Yes why If No why			
14.	Is there anything else that you would like to tell us?		
	Thanks so much for filling out our survey!		

References

1. WHO. Adolescent and Young Adult Health. Available online: https://www.who.int/news-room/fact-sheets/detail/adolescents-health-risks-and-solutions (accessed on 22 June 2021).

Adopted from: WHO Quality assessment guidebook [15].

- 2. The World Population Prospects: 2015 Revision; United Nations Economic and Social Council: New York, NY, USA, 2015.
- 3. Herbenick, D.; Reece, M.; Schick, V.; Sanders, S.A.; Dodge, B.; Fortenberry, J.D. Sexual behaviors, relationships, and perceived health status among adult women in the United States: Results from a national probability sample. *J. Sex. Med.* **2010**, 7, 277–290. [CrossRef] [PubMed]
- Hensel, D.J.; Nance, J.; Fortenberry, J.D. The association between sexual health and physical, mental, and social health in adolescent women. J. Adolesc. Health 2016, 59, 416–421. Available online: https://pubmed.ncbi.nlm.nih.gov/27491340/ (accessed on 22 June 2021). [CrossRef] [PubMed]
- 5. WHO. WHO | Defining Sexual Health; WHO: Geneva, Switzerland, 2014.
- 6. Haffner, D.W. Facing facts: Sexual health for America's adolescents: The report of the National Commission on Adolescent Sexual Health. *SIECUS Rep.* **1995**, 23, 2–8. Available online: https://pubmed.ncbi.nlm.nih.gov/12319704/ (accessed on 22 June 2021). [PubMed]
- 7. Pakistan Bureau of Statistics. *Block Wise Provisional Summary Results of 6th Population & Housing Census-2017*; Pakistan Bureau of Statistics: Islamabad, Pakista, 3 January 2018. Available online: https://www.pbs.gov.pk/content/block-wise-provisional-summary-results-6th-population-housing-census-2017-january-03-2018 (accessed on 22 June 2021).
- 8. Studies NI of, P. The DHS Program—Pakistan Special, 2019—Final Report. Available online: https://dhsprogram.com/publications/publication-FR366-Other-Final-Reports.cfm (accessed on 22 June 2021).
- 9. Population Facts. Fertility among Very Young Adolescents. 2019. Available online: https://www.un.org/en/development/desa/population/publications/pdf/popfacts/PopFacts_2019-1.pdf (accessed on 22 June 2021).

 WHO. Adolescent Pregnancy. Available online: https://www.who.int/news-room/fact-sheets/detail/adolescent-pregnancy (accessed on 22 June 2021).

- 11. UNFPA. *UNFPA Strategy on Adolescents and Youth*; UNFPA—United Nations Population Fund: New York, NY, USA, 2007; Available online: https://www.unfpa.org/resources/unfpa-strategy-adolescents-and-youth (accessed on 22 June 2021).
- 12. Gah, S. Status and Policies Related to Adolescent Health in Pakistan. Available online: https://iapreport.org/2017/files/ShirkatGah-Women%60sResourceCentre_Pakistan-IAP2017Report_submission.pdf (accessed on 22 June 2021).
- 13. UNPO. UNPO: Gilgit Baltistan: All Parties National Alliance Stages Sit-In Protest over GB Elections. Available online: https://unpo.org/article/10366 (accessed on 22 June 2021).
- 14. Mir. Underage, Under Law: G-B Lawmakers Block Bill to Ban Child Marriages. Available online: https://tribune.com.pk/story/1007117/underage-under-law-g-b-lawmakers-block-bill-to-ban-child-marriages (accessed on 22 June 2021).
- 15. WHO. *Quality Assessment Guidebook: A Guide to Assessing Health Services for Adolescent Clients*; WHO: Geneva, Switzerland, 2009; Available online: https://apps.who.int/iris/bitstream/handle/10665/44240/9789241598859_eng.pdf;jsessionid=0CE3CD045 A9CE5A19EF59182A02C2FBF?sequence=1 (accessed on 9 March 2021).
- 16. Burnet by Sexual and Reproductive Health of Unmarried Young People in Asia and the Pacific Review of Knowledge, Behaviours and Outcomes Sexual and Reproductive Health of Unmarried Young People in Asia and the Pacific Review of Knowledge, Behaviours and Outcomes Prepared for Unfpa Asia Pacific Regional Office. Available online: www.burnet.edu.au (accessed on 23 June 2021).
- 17. Smith, G.; Kippax, S.; Aggleton, P.; Tyrer, P. HIV/AIDS School-Based Education in Selected Asia-Pacific Countries. *Sex Educ.* **2003**, 3, 3–21. Available online: http://www.unaids.org/hivaidsinfo/ (accessed on 23 June 2021). [CrossRef]
- 18. Iyer, P.; Clarke, D.; Aggleton, P. Barriers to HIV and sexuality education in Asia. Health Educ. 2014, 114, 118–132. [CrossRef]
- 19. WHO. A Develop a Theory-Driven Approach Youth-Centred Digital Health Interventions a Framework for Planning, Developing and Implementing Solutions with and for Young People; WHO: Geneva, Switzerland, 2014.
- Hansen, D.L.; Derry, H.A.; Resnick, P.J.; Richardson, C.R. Adolescents searching for health information on the internet: Anobservational study. J. Med. Internet Res. 2003, 5, 32–52. Available online: https://pubmed.ncbi.nlm.nih.gov/14713653/ (accessed on 23 June 2021). [CrossRef] [PubMed]
- 21. Ndayishimiye, P.; Uwase, R.; Kubwimana, I.; Niyonzima, J.D.L.C.; Dzekem Dine, R.; Nyandwi, J.B.; Ntokamunda Kadima, J. Availability, accessibility, and quality of adolescent Sexual and Reproductive Health (SRH) services in urban health facilities of Rwanda: A survey among social and healthcare providers. *BMC Health Serv. Res.* 2020, 20, 697. [CrossRef] [PubMed]
- 22. Kennedy, E.C.; Bulu, S.; Harris, J.; Humphreys, D.; Malverus, J.; Gray, N.J. "These issues aren't talked about at home": A qualitative study of the sexual and reproductive health information preferences of adolescents in Vanuatu. *BMC Public Health* **2014**, *14*, 770. Available online: http://www.biomedcentral.com/1471-2458/14/770 (accessed on 22 June 2021). [CrossRef] [PubMed]
- 23. Taffa, N.; Bjune, G.; Sundby, J.; Gaustad, P.; Alestrøm, A. Prevalence of gonococcal and chlamydial infections and sexual risk behavior among youth in Addis Ababa, Ethiopia. *Sex. Transm. Dis.* **2002**, *29*, 828–833. Available online: https://pubmed.ncbi.nlm.nih.gov/12466727/ (accessed on 22 June 2021). [CrossRef] [PubMed]
- 24. Godia, P.M.; Olenja, J.M.; Hofman, J.J.; Van Den Broek, N. Young People's Perception of Sexual and Reproductive Health Services in Kenya. Available online: http://www.biomedcentral.com/1472-6963/14/172 (accessed on 23 June 2021).
- 25. Nmadu, A.G.; Mohamed, S.; Usman, N.O. Barriers to adolescents' access and utilisation of reproductive health services in a community in north-western Nigeria: A qualitative exploratory study in primary care. *Afr. J. Prim. Health Care Fam. Medicine* **2020**, *12*, 1.
- 26. Thongmixay, S.; Essink, D.R.; De Greeuw, T.; Vongxay, V.; Sychareun, V.; Broerse, J.E.W. Perceived barriers in accessing sexual and reproductive health services for youth in Lao People's Democratic Republic. *PLoS ONE* **2019**, *14*, e0218296. [CrossRef] [PubMed]
- 27. Raheel, H.; White, F.; Kadir, M.M.; Fatmi, Z. Knowledge and beliefs of adolescents regarding sexually transmitted infections and HIV/AIDS in a rural district in Pakistan Knowledge and beliefs of Adolescents regarding Sexually Transmitted Infections and HIV/AIDS in a rural district in Pakistan Department of Hafsa Raheel. *J. Pak. Med. Assoc.* 2007, 57, 1–8. Available online: http://ecommons.aku.edu/pakistan_fhs_mc_chs_fl55 (accessed on 23 June 2021).
- 28. Jonas, K.; Crutzen, R.; Krumeich, A.; Roman, N.; Van Den Borne, B.; Reddy, P. Healthcare workers' beliefs, motivations and behaviours affecting adequate provision of sexual and reproductive healthcare services to adolescents in cape town, south Africa: A qualitative study. *BMC Health Serv. Res.* **2018**, *18*, 109. [CrossRef] [PubMed]
- 29. Rana, Y.; Kanik, A.; Özcan, A.; Yuzer, S. Nurses' approaches towards sexuality of adolescent patients in Turkey. *J. Clin. Nurs.* **2007**, 16, 638–645. Available online: https://pubmed.ncbi.nlm.nih.gov/17402944/ (accessed on 23 June 2021). [CrossRef] [PubMed]
- 30. Mngadi, P.T.; Faxelid, E.; Zwane, I.T.; Höjer, B. Ransjo-Arvidson AB. Health providers' perceptions of adolescent sexual and reproductive health care in Swaziland. *Int. Nurs. Rev.* **2008**, *55*, 148–155. Available online: https://pubmed.ncbi.nlm.nih.gov/18 477098/ (accessed on 23 June 2021). [CrossRef] [PubMed]
- 31. Klingberg-Allvin, M.; Johansson, A.; Nga, N.T.; Ransjö-Arvidson, A.B. Perspectives of midwives and doctors on adolescent sexuality and abortion care in Vietnam. *Scand. J. Public Health* **2006**, *34*, 414–421. Available online: https://pubmed.ncbi.nlm.nih. gov/16861192/ (accessed on 23 June 2021). [CrossRef] [PubMed]
- 32. Pandey, P.L.; Seale, H.; Razee, H. Exploring the factors impacting on access and acceptance of sexual and reproductive health services provided by adolescent-friendly health services in Nepal. *PLoS ONE* **2019**, *14*, e0220855. [CrossRef] [PubMed]

33. Mazur, A.; Brindis, C.D.; Decker, M.J. Assessing youth-friendly sexual and reproductive health services: A systematic review. *BMC Health Serv. Res.* **2018**, *18*, 216. [CrossRef] [PubMed]

- 34. UNFPA. Adding It Up Adding It Up It the Costs and Benefits of Investing in Sexual and Reproductive Health 2014; UNFPA: New York, NY, USA, 2007.
- 35. Flicker, S.; Guta, A.; Larkin, J.; Flynn, S.; Fridkin, A.; Travers, R.; Pole, J.; Layne, C. Survey Design from the Ground Up: Collaboratively Creating the Toronto Teen Survey. *Health Prom. Pract.* **2010**, *11*, 112–122. [CrossRef] [PubMed]