GOING ONLINE FOR SEXUAL AND REPRODUCTIVE HEALTH

MEANINGFULLY ENGAGING ADOLESCENT GIRLS AND YOUNG WOMEN FOR SMARTER DIGITAL INTERVENTIONS

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MSD for Mothers

Study workshop in Lilongwe, Malawi.
Photo taken by Martina Chimzimu.

TABLE OF CONTENTS

LIST OF ACRONYMS

CSO   Civil-society organization

DHS   Demographic health surveys

GBV   Gender-based violence

HIV   Human immunodeficiency virus

HPV   Human papillomavirus

IPV   Intimate partner violence

LMICs   Low- and middle-income countries

MHM   Menstrual hygiene management

SRHR   Sexual and reproductive health and rights

STI   Sexually transmitted infection

TEGA   Technology Enabled Girl Ambassadors

WHO   World Health Organization

GLOSSARY OF TERMS

Adolescent girls and young women: This study focuses specifically on two populations—adolescent girls ages 15 to 18 years old and young women ages 19 to 24 years old.

Digital platforms: This includes websites, mobile applications, social media platforms, and messaging services.

Digital technologies: This includes digital and computerized devices, digital communications or social media, and digital audio video.

Human-centered design: This is research that is designed to place the experience of the human "research subject" at the center of research design and implementation.

Internet enabled phones: Mobile phones with internet access, including smartphones.

Lean research: Developed by Massachusetts Institute of Technology and Tufts University, lean research aims to create a "respectful and enjoyable experience for research participants, [...] increase the quality and accuracy of information gathered through field research, improve the usefulness of research findings for stakeholders, and enable both the research process and outputs to benefit study subjects and their communities, as well as donors and decision-makers".[1]

Meaningful youth engagement: A participatory process in which young people's ideas, expertise, experiences, and perspectives are integrated throughout programmatic, policy, and institutional decision-making structures so as to best inform outcomes. This process requires young people to be involved in all levels and stages of program, policy, and other initiative development, including design, implementation, and evaluation. Participation and engagement must be supported by: (i) access to accurate and youth-friendly information; (ii) meaningful decision-making mechanisms; and (iii) fully integrated accountability mechanisms from stakeholders.[2]

Sexual and reproductive health and rights (SRHR):
The Guttmacher-Lancet Commission defines SRHR as "the physical, emotional, mental and social wellbeing in relation to all aspects of sexuality and reproduction, not merely the absence of disease, dysfunction or infirmity."[3] SRHR topics, include contraceptive services, sexually transmitted infection (STI) care, the prevention and treatment of HIV/AIDS, sexual education, abortion care, issues associated with gender-based violence (GBV), and general sexual health and wellbeing. The study explores different elements of SRHR as they emerge in interview data.

Technology Enabled Girl Ambassadors (TEGA): TEGA is a peer-to-peer research methodology co-created with young people, by which adolescent girls and young women ages 16 to 24 years old conduct interviews within their own communities using a tailored smartphone application. TEGA draws on the principles of meaningful youth engagement, human-centered design, and lean research.

EXECUTIVE SUMMARY

This report, developed by Girl Effect in collaboration with Women Deliver, explores the barriers and opportunities of digital technology in improving adolescent girls' and young women's access to sexual and reproductive health and rights (SRHR) information. Globally, internet-enabled mobile phone use among this population is increasing, but there is little evidence about whether and how they use the internet to access information about a range of SRHR issues, including puberty, menstruation, bodily autonomy, and healthy relationships.

This research's unique methodology hinges on the principles of meaningful youth engagement, where adolescent girls and young women themselves were involved in the design, collection, and analysis of data.

Girl Effect's Technology Enabled Girl Ambassadors (TEGA) interviewed 169 adolescent girls and young women ages 15 to 24 in India, Malawi, and Rwanda.

The key question informing the design of this study is: **How can we harness the power of digital technology to improve adolescent girls' and young women's SRHR?** Interviews collected data on the what, why, and how of SRHR information adolescent girls and young women search for via internet-enabled phones. In addition, how SRHR information found online is used or acted upon was explored.

This research listened to adolescent girls' and young women's lived experiences to start unpacking these complexities. The study utilized tactics such as peer interviewing and youth-led validation workshops to ensure that the interviewees felt comfortable talking about sensitive SRHR topics, while maintaining the goal of collecting in-depth, candid, and qualitative data. Validation workshops provided the opportunity for those involved to discuss findings in-depth and develop recommendations on how digital spaces can be improved to ensure SRHR information is accurate and trustworthy, and how online platforms can be used to advance advocacy efforts.

KEY FINDINGS

The data revealed that adolescent girls and young women in India, Malawi, and Rwanda have varied experiences in accessing SRHR information online. Overall, adolescent girls and young women are turning to digital platforms as a one-stop shop, where they look for information about their bodies, their health, and their relationships. However, they reported that they do not act on the digital information they find, partly due to a lack of trust in its credibility. Additionally, stigma and socio-cultural norms impact how adolescent girls and young women talk about and access SRHR information and services, resulting in varied and nuanced findings.

Primary findings are as follows:

1 Adolescent girls and young women use multiple digital platforms to access varied SRHR information.

Different digital platforms are used to look up SRHR information in each location. Google and YouTube are preferred in India and Rwanda, while Facebook and WhatsApp groups are preferred in Malawi. WhatsApp and Facebook are also spaces to discuss and share knowledge across locations. Adolescent girls and young women in the study sample did not use specific SRHR-related applications or websites.

The primary SRHR topics accessed online vary by location. Adolescent girls and young women in India search mostly for information on menstruation and sex. In Malawi, they search for information on contraception, sexual health, and abortion. In Rwanda, they search for information on love, relationships, and puberty.

2 Adolescent girls and young women seek sensitive SRHR information through internet-enabled phones because it can afford privacy and/or anonymity.

Adolescent girls and young women don't feel comfortable discussing many SRHR issues, even with a close confidant. Hence, digital platforms are a key source of information for SRHR topics that remain taboo.

Adolescent girls and young women fear stigma and suspicion of sexual activity among peers and relatives. They fear both asking questions in person and having their online search histories scrutinized.

3 **Adolescent girls and young women reported barriers to access and challenges with using digital platforms to meet their SRHR information needs.**

Adolescent girls' and young women's key issue with information found online was being **unsure of its accuracy and validity.** Therefore, they attempt to validate online information with trusted peers.

Barriers that hinder use of digital platforms for SRHR information include **fears of getting inaccurate information and of being negatively influenced by information found online.** For example, adolescent girls and young women might worry about accidentally ending up on a pornographic site.

4 **Predominantly, fear and stigma preclude adolescent girls and young women from acting on information they find on digital platforms.**

Adolescent girls and young women are wary of acting on SRHR information they find online. They reported feeling unsure of the accuracy of the information. They also reported a fear of judgment and repercussions from family members if they found out they searched for and acted on such information.

For many adolescent girls and young women, **taking action, such as visiting a physical health or SRHR service center, is not a common step after finding information online.**

CONCLUSIONS

This research offers an expanded understanding of adolescent girls' and young women's perceptions of the barriers and opportunities of digital platforms as a source of SRHR information. Additionally, the study reveals an in-depth account of their SRHR questions and concerns. This includes how fear of judgment and stigmatization both influence their SRHR information-seeking behaviors and use of information found online.

When adolescent girls and young women proactively and independently manage and express their SRHR in an informed way, it offers benefits to society as a whole. As the world's population of young people grows, efforts to address identified barriers and unlock the potential of digital solutions are necessary. Young people's diverse perspectives, lived experiences, and expertise on these topics make them uniquely capable partners. Given this, they should be engaged meaningfully in program design and implementation.

RECOMMENDATIONS

The following recommendations are informed by the study results and were co-created by adolescent girls and young women.

To harness the power of digital platforms to improve adolescent girls' and young women's SRHR, governments, policymakers, civil society, content and technology developers developers, and donors—working meaningfully alongside young people—should:

1 **Ensure there is accurate and comprehensive SRHR information** available online across varied digital platforms, and note when information is scientifically valid or medically verified.

2 **Link online SRHR information to appropriate youth-friendly medical and community services** to raise awareness of trustworthy digital platforms and to encourage follow-up with services.

3 **Meaningfully engage youth in the design of digital SRHR resources,** and testing of online SRHR platforms, to make them accessible and youth-friendly, and encourage their use.

4 **Provide digital literacy education** and increase opportunities to privately access internet-enabled devices.

5 **Increase investments in gender equality,** including through the provision of comprehensive sexuality education, to help create an enabling environment for all people to seek out health information and reduce stigma around SRHR.

Portrait of an adolescent girl in India.
Photo taken by Mark Tuschman.

INTRODUCTION

Adolescence is the most crucial time to lay the foundation for healthy sexual and reproductive lives and address issues that disproportionately impact adolescent girls, such as harmful gender norms, early marriage, and gender-based violence.[4] Lack of accurate information is a driver of risky sexual behavior and poor reproductive health.[5] When adolescent girls and young women are equipped with the knowledge to make decisions about their sexual and reproductive health and rights (SRHR), and when barriers to accessing health services are addressed, they are more likely to fulfill their potential, finish their education, and find economically empowering jobs.[6]

Adolescents and young people face multiple barriers to accessing accurate SRHR information, and are often uninformed or misinformed about their SRHR. For example, in 2015, only 19 to 25 percent of adolescents and young people ages 15 to 19 years old in South Asia and sub-Saharan Africa had comprehensive human immunodeficiency virus (HIV) knowledge and in-depth knowledge of at least one modern contraceptive.[7] Comprehensive sexuality education (CSE) is not universally implemented in many low- and middle-income countries (LMICs),[8] and the information that is available may not be easily accessible, trustworthy, or youth-friendly. The situation is worse for minority groups, among whom structural barriers and socio-economic disparity are prevalent.[9] This is compounded by other factors, such as age, location (rural/urban), and marital status.
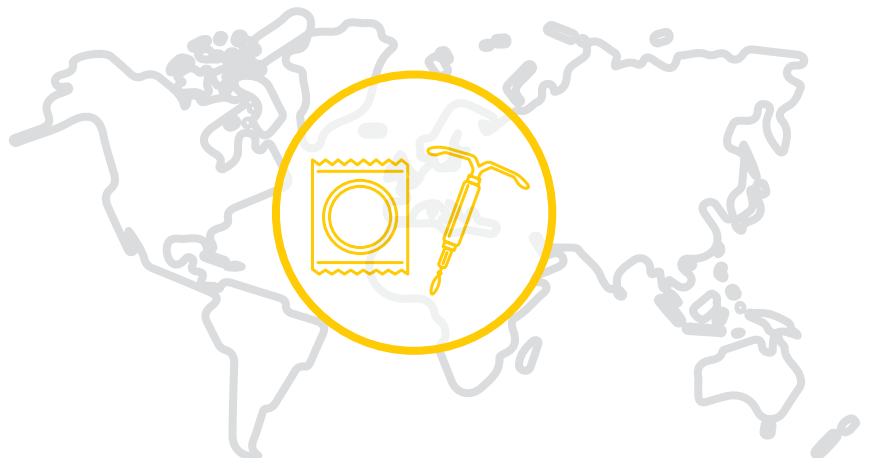
If health systems do not engage with and provide education for adolescents, opportunities are lost to promote health and wellbeing during adolescence and into adulthood. When adolescent girls and young women have limited access to SRHR information, they are more likely to have an adolescent birth; face increased risk of maternal mortality, unsafe abortion, and coercion; and can be more likely to contract sexually transmitted infections (STIs) and HIV.[10] Unmet need for modern contraceptives among adolescents globally is estimated to be 23 million, and as many as half of pregnancies among adolescent girls and young women in LMICs are unintended or unwanted.[11] In sub-Saharan Africa, three out of four new HIV infections are among adolescent girls and young women ages 15 to 19 years old.[12] Adolescents are also more likely to experience intimate partner violence; 29 percent of adolescents who have been married in LIMCs have experienced physical or sexual violence.[13] Adolescent girls and young women in LMICs also face barriers to menstrual hygiene management, which can contribute to school absenteeism when compounded with poor water, sanitation, and hygiene facilities and lack of menstrual hygiene supplies.[14]

Lack of formal SRHR education and trustworthy information sources, including on gender roles and menstrual health management, leads to adolescent girls and young women relying on informal information sources that may not be accurate and can reinforce harmful and exclusionary gender norms. Therefore, it is crucial to understand how to improve access to accurate and comprehensive SRHR information for this population.

THE INTERSECTION:
TECHNOLOGY, YOUTH, AND SRHR

Despite gendered inequalities around mobile ownership and internet access, adolescent girls and young women in LMICs are increasingly gaining access to internet-enabled phones. Mobile health interventions are also becoming more common worldwide.[15]

Evidence suggests young people are responsive and enthusiastic to digital solutions related to health.[16] In 2019, a study that interviewed more than 1,500 young people across more than 125 countries found that 92 percent of young people agree that technology is a critical enabler of health care solutions, and 62 percent said they already used technology in some capacity for their own health-related needs.[17] Close to 70 percent of respondents suggested they used technology to access health information and advice or to identify a health practitioner. The biggest concerns about using technology were data security and false information.[18] Most young people said they see themselves using more digital, web-based technologies for their health-related needs in the future.[19]

More specifically, digital solutions have the potential to tackle some of the key barriers adolescents in LMICs face when seeking SRHR information and services, including provider bias, stigmatization and discrimination, lack of privacy, embarrassment, and high cost of services and transportation.[20, 21] Merging technology and SRHR can encourage an open dialogue about taboo topics in the wider community, increase self-efficacy of young people, and engage mass audiences in a cost-effective and meaningful manner.

Currently, there are a variety of digital solutions to address specific SRHR topics, including stigma and SRHR knowledge, fertility and contraception, sexual violence, youth-friendly health services, and others.[22] However, these technologies must be rigorously tested and designed with a human-centered approach for them to be effective.

There is some evidence that digital solutions can reach young people directly and achieve knowledge and behavior change around SRHR.[23, 24] For example, a systematic review of 99 studies presenting data on digital HIV/STI initiatives found that both mobile health-based interventions (text and phone calls) and internet-based mobile interventions improved antiretroviral therapy adherence, clinic attendance rates, and, in some cases, self-care.[25] However, the evidence for the effectiveness of most digital health initiatives, including those covering broader SRHR topics, is limited.[26] Most studies have been performed in high-income countries, such as the United States of America, and those in LMICs focus more heavily on the impact of text messaging and phone calls rather than internet-based solutions to deliver SRHR information.[27, 28]

Efforts to capture young people's needs and experiences using SRHR products and services and their opinions on how best to access such information are also lacking. Some data on how young people use technology to learn, communicate, and discuss SRHR have been collected in the United States in 2011 and in Bangladesh in 2019.[29,30] The United Nations Educational, Scientific and Cultural Organization's 2020 initiative, "Switched On," also aims to understand how sexuality education and information are being delivered in digital spaces, as well as who is accessing them and how.[31] To harness the power of digital spaces to improve young people's SRHR, a deeper understanding of their internet use, the role of data privacy, and why many online SRHR solutions are not used is needed.[32]

FOCUS COUNTRIES' CONTEXT

India, Malawi, and Rwanda were chosen for this research study because of their potential to offer contrasting contexts related to varied norms about mobile use, different levels of SRHR education and SRHR needs, and different types of existing digital SRHR solutions.

INDIA

YOUTH SRHR CONTEXT

SRHR education was introduced in state schools in 2007, yet 12 out of 29 states refused to implement the curriculum.[34] Currently, Indian adolescent girls and young women who take home science in school receive some education on SRHR, but it is not compulsory.[35]

BARRIERS

Cultural taboos and norms around menstruation and sex, in addition to socio-economic barriers, contribute to low levels of SRHR knowledge and access to SRHR services among youth.[36] Adolescent girls and young women may miss school during their periods because managing menstruation is uncomfortable and difficult due to poor toilet and sanitation facilities and lack of access to hygienic sanitary products at school.[37, 38]

DIGITAL LANDSCAPE AND PHONE USE

In India, more young people are going online and own mobile phones. While there have been multiple SRHR platforms launched in India. Research suggests that while services, products, and technological innovation exist, few resources are specifically designed for adolescents or are not easily accessible.[39]

EXAMPLES OF INTERNET-ENABLED SOLUTIONS:
M-SATHI: PROVIDING ONLINE COMPREHENSIVE SEXUALITY EDUCATION[40]

Developed with a human-centered design approach, in partnership with the youth-led development agency Restless Development, M-Sathi is a mobile application that provides accurate and stigma-free SRHR information in English and Hindi. Based on continuous feedback, M-Sathi incorporates visuals, audio, and games in language that is approachable to more youth, including those who are not able to read. In addition, the application is working to include an index of SRHR service locations available through government and external service providers.
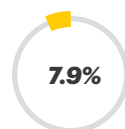
BY THE NUMBERS

SRHR

For women, the median age of first sexual intercourse and first marriage were both *19 years old.*

HIV prevalence among women was 0.2%.

7.9% *Teenage pregnancy prevalence was 7.9%.*

33% of currently married and 37% of sexually active unmarried women ages 15 to 24 *used a modern method of contraception.*

PHONE ACCESS

57% of adolescent girls and young women ages *15 to 24 owned a mobile phone.*

(DHS 2016)[33]

MALAWI

YOUTH SRHR CONTEXT

In Malawi, SRHR information available for youth is limited, and its quality and effectiveness is unclear. For example, there is compulsory life skills education in school, which includes some guidance on menstruation, HIV/AIDS, and contraception.[42] However, an evaluation of the curriculum noted it lacks necessary details on reproduction, sexuality, STIs, and HIV risks, and sometimes contains inaccurate or misleading information.[43] Youth can also access SRHR information on the radio or from youth organizations and peers.[44]

BARRIERS

Stigma, embarrassment, a perceived lack of privacy, or an unwelcoming attitude on the part of health facility staff, parents, and teachers prevents adolescent girls and young women from seeking SRHR information or services.[45, 46] In addition to restrictive abortion laws, these barriers contribute to high rates of teenage pregnancy, STIs, unsafe abortions, and injuries related to such procedures among those under the age of 25.[47, 48] Long distances to the nearest health care provider, high costs of health information or services, and lack of youth-friendly services also limit access.[49]

DIGITAL LANDSCAPE AND PHONE USE

In Lilongwe, the capital of Malawi, 39.9 percent of females own a mobile phone.[50] However, borrowing mobile phones in Malawi is challenging, as internet-enabled devices are considered a luxury and are prohibitively expensive.[51] Consequently, the use of digital technologies to deliver health services and information, including SRHR, has not been fully explored.

EXAMPLES OF INTERNET-ENABLED SOLUTIONS
TUNE ME: INFORMATION ABOUT LOVE, SEX, RELATIONSHIPS, AND HEALTH[52]

Tune Me is an SRHR mobile-optimized website funded by the Ford Foundation and the United Nations Population Fund aimed at improving the lives of youth in sub-Saharan Africa by empowering them to make informed decisions about their bodies. Tune Me has 2 million users and 4 million page views across seven countries, including Malawi. It features 400 user stories, adapted and translated for local audiences, on topics ranging from menstruation to gender-based violence. Tune Me works on low- and high-end mobile devices in environments where high data charges and poor network coverage limit access to online services. In partnership with Panoply Digital, Tune Me gathers data on the use of its website in order to continuously evolve and meet user needs.
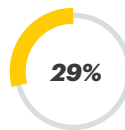
BY THE NUMBERS

SRHR

For women, the median age at *first sexual intercourse was 16.8 years old,* and median age at *first marriage was 18.2 years old.*

HIV prevalence among women was 10.8%.

29% *Teenage pregnancy prevalence was 29%.*

Among currently married and sexually-active unmarried women, 15% of adolescent girls and 46% of young women *currently used a modern method of contraception.*

PHONE ACCESS

50.3% of adolescent girls and young women ages *15 to 24 owned a mobile phone.*

(DHS 2016)[41]

RWANDA

YOUTH SRHR CONTEXT

Both adults and children can learn about sex from the radio (for example, the Urunana drama) and community centers, and some children learn about sex at school. The government of Rwanda's 2018-2024 National Family Planning and Adolescent Sexual and Reproductive Health Strategic Plan aims to introduce comprehensive sexuality education in schools by 2024.[55]

BARRIERS

Despite varied SRHR information sources, social norms around sexuality continue to deter young people from seeking contraceptive services or asking their partners to use a condom.[56] Men feel they cannot use condoms with their wives as condom use suggests the intent to be unfaithful.[57] Abstinence messages for young women contribute to the perception that using a condom is a "sin" and might lead to a young woman being labeled a prostitute.[58] Culturally, decisions around contraception and family size are still taken by men, making it hard for women to negotiate safer sexual behaviors.[59]

DIGITAL LANDSCAPE AND PHONE USE

In Rwanda, girls can acquire identity cards at the age of 16.[60] SIM card registration is contingent on having an identity card, resulting in phones being registered to and belonging to family members or other contacts.[61] Furthermore, students are not allowed to have mobile phones in school, and those who own one tend to keep it at home, limiting their use.[62] Additionally, mobile data services are expensive, internet services are not always reliable, and digital literacy is low.[63]

EXAMPLES OF INTERNET-ENABLED SOLUTIONS:
CYBERRWANDA: REDUCING UNPLANNED TEEN PREGNANCY[64]

CyberRwanda, developed by Y-Labs and Youth+ Tech+Health in 2017, created the digital education tools Cybergirl and Cyberboy by engaging more than 400 youth in the design process. CyberRwanda delivers trusted, private SRHR education, service

referrals, and navigation through interactive digital and print education tools. The Cybernurse feature allows youth to receive youth-friendly, nonjudgmental information and services from a trained provider. Among adolescents who engaged with Cybergirl's latest prototypes, knowledge of condom effectiveness increased by 21 percent and awareness of dual protection increased by 42 percent.

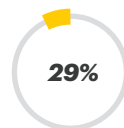///

BY THE NUMBERS

SRHR

For women, the median age at first sexual intercourse and at first marriage were both *21.8 years old.*

HIV prevalence among women was 3.6%.

29% *Teenage pregnancy prevalence was 7.3%.*

Among currently married and sexually-active unmarried women, 2% of adolescent girls and 20% of young women *currently used a modern method of contraception.*

PHONE ACCESS

In 2018, *71% of households owned a mobile phone.*[54]
*No data available by gender.

(DHS 2015)[53]

STUDY OBJECTIVES

The key question informing the research design of this study is:

How can we harness the power of digital technology to improve adolescent girls' and young women's SRHR?

This study seeks to explore how adolescent girls and young women currently use digital technology to access SRHR information and demystify information-seeking behaviors, since increased knowledge is a step toward behavior change to improve health outcomes. Additionally, the study seeks to understand the barriers and opportunities for those with access to digital platforms on mobile phones in India, Malawi, and Rwanda. This research focuses on adolescent girls and young women because they have additional SRHR needs and barriers due to the harmful socio-cultural norms, discriminatory laws, and practices they face. For this reason, the study did not interview boys and men.

KEY RESEARCH QUESTIONS:

1   What digital technologies are adolescent girls and young women using to access SRHR information, and how and why are they using them?

2   If adolescent girls and young women are not using digital technology to get SRHR information, why aren't they and where do they go for that information instead?

3   What do adolescent girls and young women do with the SRHR information they find online? Do they trust it and/or act on it?

4   How can digital spaces be better used to help improve SRHR among adolescent girls and young women?

5   What features should digital spaces that offer SRHR information have to be more youth-friendly?

II
METHODOLOGY

This research study employed a mixed-methods approach, including one round of face-to-face qualitative Technology Enabled Girl Ambassadors (TEGA) interviews and validation workshops in three locations in India, Malawi, and Rwanda. For a full account of the methods and sources reviewed, please visit here.

STUDY METHODOLOGY

RESEARCH LOCATIONS

In India, the study took place in the urban locations of Jaipur, the capital city of Rajasthan in Northwest India, and in Patna, the capital city of Bihar in Northeast India. In Malawi, the study took place in urban, semi-urban, and rural areas in Zomba and Lilongwe, the capital of Malawi. In Rwanda, interviews took place in Nyarugenge, an urban area within Kigali, the capital city of Rwanda, and Musanze, a semi-urban area located in Northern Rwanda.

LITERATURE REVIEW

A literature review was used to understand the existing research related to adolescent girls' and young women's access to digital technology and SRHR information, ensure the added value of this study, and provide important contextual information on which to ground the research. The review sought global development literature, as well as evidence from each of the focus countries explored in the study: India, Malawi, and Rwanda. Google Scholar and key journal databases such as PubMed were used, and the latest research and evidence was prioritized. Most material dated before 2010 was excluded. In addition, data points from the World Health Organization (WHO), the Demographic and Health Surveys (DHS), and Statista, an online business data platform with information on industries worldwide, were used.

INDIA   **MALAWI**   **RWANDA**

TECHNOLOGY ENABLED GIRL AMBASSADORS

TEGA, powered by Girl Effect, is a peer-to-peer research methodology co-created with young people. It draws on the principles of meaningful youth engagement, human-centered design, and lean research. With TEGA, adolescent girls and young women ages 16 to 24 years old conducted interviews within their own communities using the TEGA research app on a smartphone. All of the TEGAs in India, Malawi, and Rwanda hold certificates in digital interviewing skills from the Market Research Society.

Adolescent girls and young women talk about and access SRHR information and services in varied, sometimes contradictory ways due to stigma and socio-cultural norms around SRHR. TEGAs received additional SRHR training specifically for this study to ensure they had adequate SRHR knowledge to guide discussions, understand participants' answers, and ask effective follow-up questions to start unpacking these complexities. TEGAs sought to create an interview experience that is respectful and enjoyable, unlocking open and honest conversations that might otherwise be overlooked or inaccessible when collecting data in traditional ways.


RECRUITMENT, CONSENT, AND ETHICS

TEGA research employ purposive sampling, where researchers use their judgment to select the sample. Research participants were recruited through Girl Effect's local implementing partner in each of the target locations — Restless Development in India, Rwanda Women's Network in Rwanda, and the Centre for Youth and Development in Malawi — following specific instructions and using a recruitment screener. The screener sought respondents based on gender, age, mobile access, and regular mobile usage. Recruiters were equipped with quotas and recruitment screeners in the local language. Researchers employed several strategies to meet the recruitment criteria, including utilizing community meetings and existing community programs. Partners also recruited using "roaming" and door-to-door techniques.

Informed consent and assent were collected for both adults and respondents under the age of 18 years old. In all three countries, ethics boards reviewed the study, research clearance was granted, and permits were given.

Sample Characteristics:

Overall, 169 adolescent girls and young women ages 15 to 24 years old were engaged for this research. (See Table 1, p.45 for full sample characteristics.) Most adolescent girls and young women were completing their education and not employed. The sample consisted of individuals who owned internet-enabled mobile phones (owners) and individuals who borrowed them (borrowers). The majority of the sample used smartphones and primarily used their phones to access Facebook and YouTube and listen to music.

TEGA mobile app.
All rights Girl Effect.
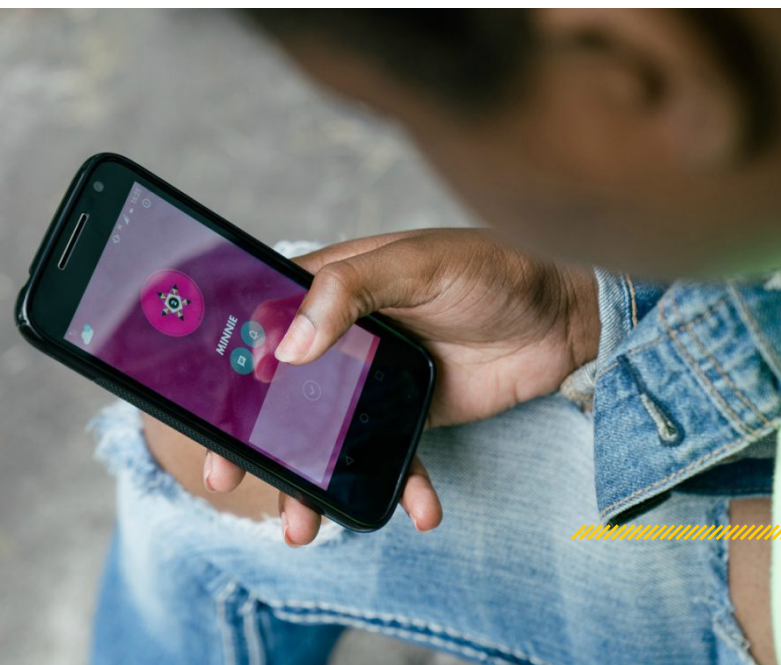
QUALITATIVE INTERVIEWS

TEGAs explored the research questions in one set of 30-minute, semi-structured interviews with adolescent girls and young women, including audio and video responses. Interviews were conducted one-on-one in quiet community spaces or respondents' homes, without guardians present. Supplementary quantitative questions were also asked, covering demographics, education, information on mobile phone ownership, and online platforms frequented.

DATA ANALYSIS

Data were uploaded to the Data Hub, Girl Effect's centralized database. All data were anonymized before data analysis. In the Data Hub, audio and video files can be instantly listened to or watched, and the researcher can tag relevant topics. The data were translated by in-country translators, who were specifically trained to translate TEGA data from adolescent participants and to moderate any safeguarding issues in their responses.

After translation, data were exported as comma-separated values files. The files were then collated and uploaded into Google Sheets, where multiple researchers could access and interrogate the data by individual, theme, and segment. The analysis team consisted of five trained qualitative researchers from India, Malawi, Rwanda, and the United Kingdom. The team analyzed the codes and completed an analysis framework in Microsoft Excel, organized according to the key questions and themes of the research. Each researcher working on the data analysis populated the framework with their findings, corresponding to the theme and audience they were analyzing.

Fisher's statistical test was used to detect any differences in the use of mobile phones between phone owners and borrowers, and between older and younger participants.

Study workshop in Jaipur, India. Photo taken by Poorvi Mehrotra.

Study workshop in Lilongwe, Malawi. Photo taken by Martina Chimzimu.

VALIDATION WORKSHOPS

In each country, between 10 and 12 adolescent girls and young women were selected from the original TEGA interview sample and brought together to participate in a validation workshop. Participatory techniques and exercises were employed to unpack and generate discussions around the qualitative findings, understand how these findings can be used for advocacy efforts. Furthermore, these techniques enabled participants to develop recommendations on how digital platforms could be optimized to improve SRHR. The sessions were facilitated by a local Girl Effect researcher, one TEGA, and either a Women Deliver Young Leader (in India and Malawi) or a gender specialist (in Rwanda).

YOUTH INVOLVEMENT

Women Deliver Young Leaders: The Women Deliver Young Leaders are a network of youth advocates who advance gender equality in their communities, countries, and around the globe. They were involved at several points during the research process. Young Leaders and people under the age of 30 were engaged during the Women Deliver 2019 Conference to comment on the broad research area. Two Women Deliver Young Leaders helped to facilitate the validation workshops. The Women Deliver Young Leaders Research Committee also provided feedback on the draft questions, validation workshops, and first draft of the report.

TEGAs: TEGAs were involved in research design, quality assurance, and analysis. They shared feedback on content and translations of the research survey. After the fieldwork, TEGAs reflected on the research they completed, including participant observations, emerging themes, and trends. TEGAs also helped facilitate the validation workshops conducted in each location by encouraging group work and discussing key findings.

STUDY LIMITATIONS ———

Qualitative studies, due to their small sample sizes, are not numerically representative but provide significant insights into the lived realities of girls and women. The study did not collect demographic data on ethnicity, religion, marital status, or caste, as TEGA research only collects data deemed necessary for a given study. Marital status was not collected due to marriage laws in India and Rwanda, making any disclosures of marriages below the legal age a safeguarding issue. The study did not interview boys and men, as it was outside of the research's scope.

To mitigate limitations, such as the lack of common understanding of digital[i] and SRHR[ii] terminology, TEGAs took time to explain the concepts of SRHR and the internet during interviews, including by using youth-friendly descriptions and providing examples of different digital platforms. Due to the sensitivity of the topics covered, it was expected that some answers would raise contradictions or not be entirely truthful, as individuals may have given perceived socially acceptable answers. For this reason, different methods were used to prompt adolescent girls and young women to discuss these topics further, including asking questions in the third person. Effectively, respondents reported they felt comfortable answering questions, and many participants said that they felt they were able to talk more openly about SRHR topics through the entire process.

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[i] A 2018 study, conducted by Girl Effect across 25 countries, found that some adolescent girls and young women struggle with the concept of the internet and identifying when they have used the internet. For example, they may be able to identify platforms such as Google, Facebook, or WhatsApp, but they may not understand that these platforms are internet-enabled.[65]

[ii] There is an unevenness in the availability of SRHR education in schools across India, Malawi, and Rwanda, and the topic continues to be stigmatized across all study locations impacting levels of SRHR knowledge.

III

FINDINGS

TEGA DATA:
WHY AND HOW ARE ADOLESCENT GIRLS AND YOUNG WOMEN USING DIGITAL TECHNOLOGY TO ACCESS SRHR INFORMATION?

WHY USE DIGITAL TECHNOLOGY TO ACCESS SRHR INFORMATION?

In India, Malawi, and Rwanda, adolescent girls and young women used their phones to access SRHR information. No participant mentioned using a personal or public school computer or tablet for this purpose. Across settings, the research found that digital spaces offer a place for adolescent girls and young women to ask questions and browse for information privately, without fear of judgment. This finding was particularly strong among Indian adolescent girls and young women, who were more likely to spontaneously state that accessing SRHR information online was valuable because they did not feel comfortable addressing these topics with confidants in peer networks or families.

> "*Adolescent girls and young women are open to ask things on the phone, because when they ask the person face to face, they become embarrassed and end up asking less questions than they intended to ask in the first place. But then, when they ask questions on their phones, it becomes easier because no one is actually seeing you, so you end up being open and ask all the questions that you had.*"
>
> — OWNER, 19, LILONGWE, MALAWI

* Due to the sensitive nature of SRHR, the study employed "third-person" protective interviewing techniques. This allowed participants to answer in first ("I") or third person ("she", "they"), as seen throughout the findings, to openly discuss sensitive information. Quotes in this section reflect this approach.

For the adolescent girls and young women interviewed, another key advantage of using a mobile phone to research SRHR is the ability to easily access new and varied information. Malawi participants, in particular, said that a benefit of searching for information online was that it was faster than going to other offline sources. In Rwanda, adolescent girls and young women used digital platforms to access SRHR information, but felt less strongly about the benefits of going online because they were also able to get information offline from peers and print resources for young people. Reasons why adolescent girls and young women would not use phones to search for SRHR information are explored later in this section.

HOW IS DIGITAL TECHNOLOGY USED TO ACCESS SRHR INFORMATION?

Facebook, Google, WhatsApp, and YouTube are key online resources for adolescent girls and young women; very few reported using downloaded dedicated SRHR applications or named any health or SRHR websites. Different channels and platforms were popular in each location (see Figure 1).

FIGURE 1

TOP DIGITAL RESOURCES FOR SRHR INFORMATION AMONG ADOLESCENT GIRLS AND YOUNG WOMEN

KEY   ■ Owners   ■ Borrowers   ▶ Youtube   G Google   f Facebook   ◌ WhatsApp
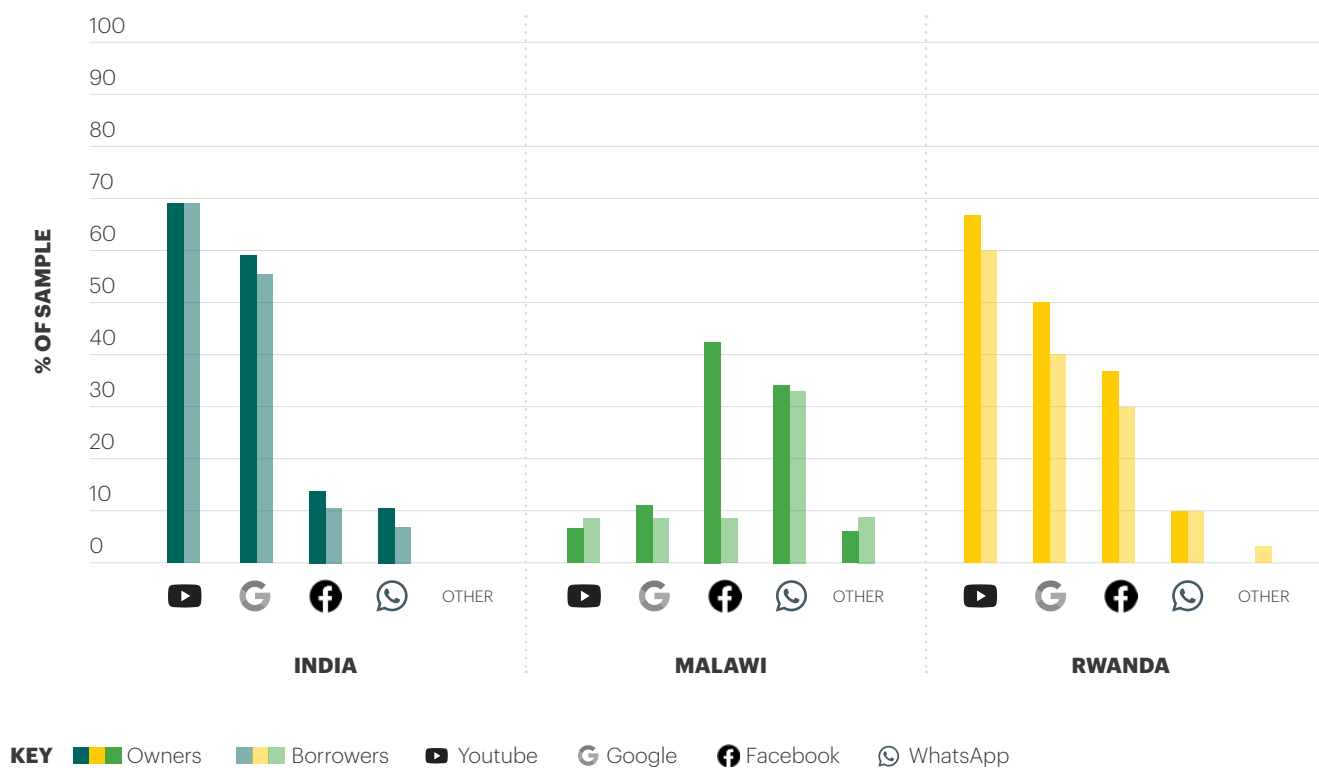
Apart from the difference in Facebook utilization between owners and borrowers in Malawi, the average use of applications, social media, and entertainment functions did not vary significantly among these groups in any of the geographies. Similar use patterns between owners and borrowers may be due to owners having to share their phones with others. There were also no differences in use between young women (ages 19 to 24 years old) and adolescent girls (ages 15 to 18 years old).

WhatsApp and Facebook

In Malawi, participants reported being more likely to use WhatsApp and Facebook groups as a source of SRHR information than using a search engine like Google. Some reported trusting information found in online groups more than information found via search engines, as it was easier to discuss and validate the information through the groups themselves. In this way, these platforms are used both as sources for information and spaces for sharing and discussing SRHR topics. In India and Rwanda, WhatsApp and Facebook were primarily used to share information rather than to source it.

There are some differences between how WhatsApp and Facebook groups operate. In some Facebook groups, questions can be posted anonymously and answered by a moderator, while WhatsApp does not afford the same anonymity and is used more to search for information.

YouTube and Google

YouTube is one of the most common channels for searching information amongst young women in India and Rwanda; it is less popular in Malawi. Interview data in Malawi suggested that this is because adolescent girls and young women are not sure how to search for information online via search engines. Some participants reach YouTube videos by searching on Google. Participants in India commonly spoke about Google and YouTube together and suggested a preference for video content over text or audio. This was corroborated by findings from the India validation workshop, where adolescent girls and young women requested more video content, as they found it easier to follow and kept them engaged.

> *"We need to follow groups that are helpful, those which can teach us how we can avoid pregnancies and use contraceptives. These are the groups that I see as good. This is because the groups can help us realize our dreams."*
>
> — OWNER, 20, LILONGWE, MALAWI

> *"Most youths look for this information on Facebook because they like interacting with others on Facebook, such as through youth groups. This is because Facebook is an easy way of interacting with the fellow youth."*
>
> — OWNER, 22, LILONGWE, MALAWI

> *"On WhatsApp groups, people also search for information there. I rarely use the internet to search for information…I see a lot of people searching for information on WhatsApp so that they get the correct information."*
>
> — OWNER, 24, ZOMBA, MALAWI

> "When they are looking for information about relationships with boys, they use Google or YouTube and search for how to treat a boy if they are in a relationship. With regard to searching for information about their bodies, they can use Google."

— OWNER, 18, NYARUGENGE, RWANDA

> "When you get your period for the first time, and you are too shy to ask, you can search Google to find the information you are looking for, and you do get the information you need. You can go to YouTube too, or you can call your friends or parents who you are comfortable with."

— BORROWER, 19, NYARUGENGE, RWANDA

However, it is important to note that overall, adolescent girls' and young women's engagement with SRHR information online is nascent, and participants reported they did not necessarily know where else or how they could find more information via digital devices.

WHAT SRHR INFORMATION ARE ADOLESCENT GIRLS AND YOUNG WOMEN SEARCHING FOR ONLINE?

The most common questions asked online were related to understanding foundational SRHR topics, such as what to do in a relationship, what happens to your body during puberty, and what happens during sex. In the validation workshops, adolescent girls and young women gave examples of typical queries, including: *What is sex? Where does my period come from? What do you do when you get your period for the first time? How do you use contraceptives? How do you prevent diseases?*

What happens during sex?

How do you use contraceptives?

What happens to your body during puberty?

These questions give a sense of the breadth of adolescent girls' and young women's knowledge gaps around SRHR, and suggest low levels of SRHR knowledge among some of the respondents. The unevenness of SRHR education among participants, the legal framework around SRHR, and socio-cultural norms partially account for the limited range of topics under SRHR that adolescent girls and young women identified more strongly with. For example, issues related to puberty, body changes, menstruation, love, and relationships were important to adolescent girls and young women across all

locations. Data from validation workshops further suggest that adolescent girls and young women are influenced by myths and misconceptions that affect the information they search for, how they understand the information they find, and if they share it with others.

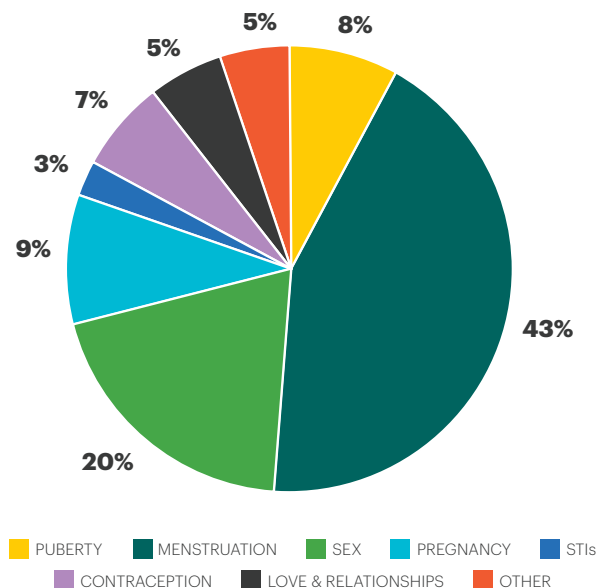# INFORMATION SEEKING BEHAVIOR BY GEOGRAPHY

INDIA

Most adolescent girls and young women in India search for information about menstruation and, more specifically, which medications to take when experiencing menstruation pains and where to obtain these medications. A small fraction of adolescent girls and young women in India discussed looking at information relevant to their life stages. This included seeking information about pregnancy and sexually transmitted infections and how to protect themselves from both, especially before marriage.

"*The advantage of using a mobile phone is that we get to know about how we should use the pads in menstruation, and when and why we bleed more and less in menstruation.*"

— BORROWER, 18, PATNA, INDIA

Pie chart: PUBERTY 8%, MENSTRUATION 43%, SEX 20%, PREGNANCY 9%, STIs 3%, CONTRACEPTION 7%, LOVE & RELATIONSHIPS 5%, OTHER 5%
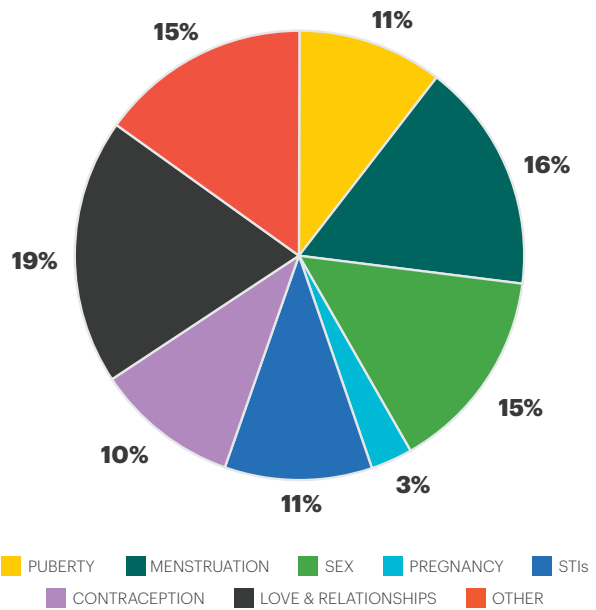
MALAWI

In Malawi, seeking information on STIs was more popular than in other geographies. Participants mentioned they looked up methods of contraception to protect themselves against STIs. Searches around terminating a pregnancy and avoiding pregnancy were also frequent. Some adolescent girls and young women mentioned they specifically worry about getting pregnant even more than they worry about contracting an STI.

"

"Sometimes they are afraid of being talked about by their friends, that they are promiscuous, and also sometimes afraid that if they do that [have sex] and some people see them, people will say they abort pregnancies and other things."

— OWNER, 20, ZOMBA, MALAWI

11%
16%
15%
3%
11%
10%
19%
15%

PUBERTY   MENSTRUATION   SEX   PREGNANCY   STIs
CONTRACEPTION   LOVE & RELATIONSHIPS   OTHER

RWANDA

"Love and relationships" was the most searched topic among adolescent girls and young women in Rwanda. Other commonly searched topics included puberty and menstruation. Similar to Malawi, adolescent girls and young women in Rwanda were motivated to get information on topics like contraception and abortions, due to a fear of the repercussions of getting pregnant before getting married.

7%
20%
23%
7%
2%
41%

PUBERTY   MENSTRUATION   SEX   PREGNANCY   STIs
CONTRACEPTION   LOVE & RELATIONSHIPS   OTHER
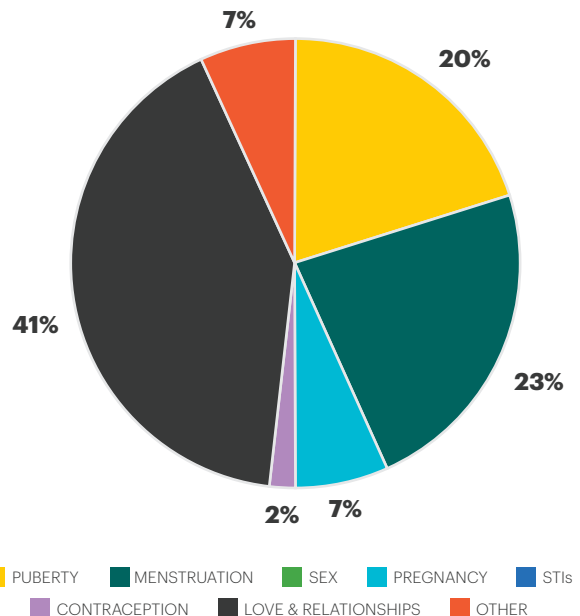
> *"They might have a question about whether they would get pregnant or not in case they engaged in sexual intercourse. That could make them curious enough to look for information. Another question they might have would be what if I fell in love with a boy and they didn't love me back or if they loved me and I didn't love them back, what would I do? Hence search about that."*

— OWNER, 17, MUSANZE, RWANDA

While there were no statistically significant differences on which SRHR topics were researched by age, across all geographies, adolescent girls and young women reported that they sought information on SRHR topics that they saw as relevant to them or their life stage. Information-seeking patterns appeared to be driven by socio-cultural norms, particularly the stigma around having premarital sex. For example, adolescent girls and young women mentioned they were less likely to seek information on contraception because they were too young to be having sex. However, data from validation workshops and findings from surveys suggest that adolescent girls and young women may state that sensitive topics such as STIs, pregnancy, and contraception are irrelevant or uninteresting to them as a tactic to avoid judgment, whereas, in reality, they are searching for this information online privately.

WHAT BARRIERS PREVENT ADOLESCENT GIRLS AND YOUNG WOMEN FROM ACCESSING SRHR INFORMATION VIA DIGITAL TECHNOLOGY?

The primary barriers to adolescent girls and young women accessing SRHR information digitally are fear of stigma and judgment. Adolescent girls and young women are worried about family, community members, and even peers finding out about their searches or noticing their activity on social media. Other reasons to not use digital platforms to access SRHR information included not knowing how to use a phone properly or not knowing how to look up the correct information online.

FEAR OF JUDGMENT

Adolescent girls and young women are worried about someone finding out what they have been seeking online and judging them or suspecting that their searches indicate that they are sexually active. This fear of judgment was irrespective of ownership status. Having to share a phone if they owned one, or borrowing a phone if they didn't, contributed to this worry.

Participants in the validation workshop in Malawi reported that an owner may check their search history after sharing their phone. As a result, adolescent girls and young women in the workshop stated that while borrowers may look for SRHR information, they will avoid sensitive topics like abortion. In India, parental disapproval was a specific concern.

"

"Most adolescent girls and young women fail to ask questions when using the phone because they fear that their friends might start thinking that they are going through what they asked about because they were so free asking the questions. To avoid being discriminated against they end up not asking."

— OWNER, 19, LILONGWE, MALAWI

"I don't have my personal phone; my sister's phone is there and I am not able to search more on her phone because my parents will get to know what all I search for and they will think wrong and since it is my sister's phone so she will also get to know."

— BORROWER, 16, PATNA, INDIA



A NEGATIVE INFLUENCE ON BEHAVIOR

While contrary to evidence,[66] some adolescent girls and young women shared the perception that learning about certain SRHR topics online could have a negative influence on their behavior. In particular, the concern was that they would be encouraged to have sex before getting married. Participants in Malawi and Rwanda said that people can be negatively influenced by the internet and start chatting to strangers or having sex.

Adolescent girls and young women in India and Rwanda also mentioned that they were fearful they may end up acting on unsafe or harmful information found online, so preferred not to search for information at all. Older participants in Rwanda were even more fearful of being negatively influenced by online information than younger participants.

"

"If I were looking for information on how I can prevent unplanned pregnancy and read some article that states that using a condom can help prevent it…that article would be encouraging me to have sexual relationships, yet it's not necessary."

— OWNER, 18, NYARUGENGE, RWANDA
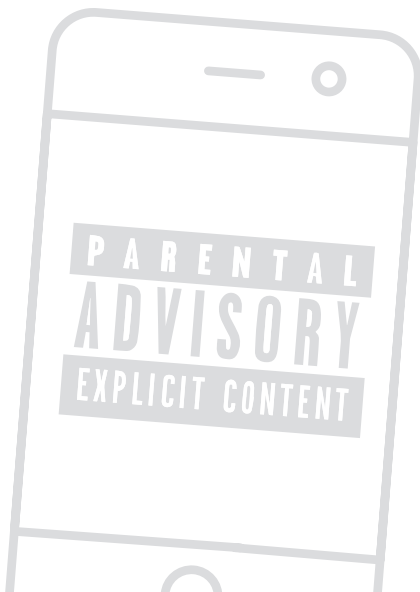
EXPOSURE TO EXPLICIT CONTENT

Some adolescent girls and young women are worried that searching for SRHR information online could lead to exposure to explicit material. This was particularly true in Malawi, where the most common disadvantage of using a phone to search about SRHR (mentioned by more than 50 percent of all participants, regardless of ownership status) was encountering pornographic videos or websites. Adolescent girls and young women said that the risk of encountering pornography stopped them from using the internet to access SRHR information. This was also mentioned in India and Rwanda, but not by a significant number of participants. In the India validation workshop, there were mentions of how the risk of viewing pornography stopped girls from using the internet for SRHR information. However, participants suggested pornography was a main source of SRHR education for boys.

"

"It also has disadvantages because, at times, you look for things like videos and you find that those videos are not good and when you see those like shameful videos and photos."

— BORROWER, 15, MUSANZE, RWANDA

DIGITAL LITERACY

Most adolescent girls and young women mentioned difficulty or lack of knowledge regarding how to delete their search history and protect their privacy on social media. This was a main barrier that limited adolescent girls and young women from searching for SRHR information on their phones, as it increased their fears of being judged and stigmatized.

"

"Yeah, you can delete it. There is a button you can press and the search history will be deleted. But I think many people don't know about it…I was told about it too, so I share it with others, and they probably teach it to others too."

— OWNER, 19, MUSANZE, RWANDA

"Search history and dates get saved; that's why adolescent girls and young women do not search about topics freely."

— OWNER, 22, JAIPUR, INDIA

ACCESS AND ACCESSIBILITY

Some participants stated that structural and technical barriers prevented them from searching for SRHR information online. Lack of data, airtime, or WiFi limited access to the internet to search for SRHR information. Similarly, it was noted that adolescent girls and young women who borrowed mobile phones complained of having less access to data bundles to go online.

In the India validation workshop, adolescent girls and young women highlighted that language barriers limited the accessibility of online information. Most information found was either in English or pure Hindi, while their preferred medium is "Hinglish" (a hybrid of Hindi and English). This point on language was echoed during the interview process, where participants asked to use some English words instead of Hindi because SRHR terminologies are mostly understood in English. Content that was not in Hinglish was seen as inaccessible.

DO ADOLESCENT GIRLS AND YOUNG WOMEN TRUST SRHR INFORMATION FOUND DIGITALLY?

YOUNG PEOPLE ARE SKEPTICAL OF THE VALIDITY OF ONLINE INFORMATION

Most adolescent girls and young women interviewed in Rwanda did not trust the SRHR information they found online. Those who questioned the authenticity of the information sought to confirm its validity with a trusted confidant or another information source.

Higher levels of trust were found in India and Malawi, where most study participants reasoned that those publishing SRHR information online must be health workers or experts. However, older participants expressed higher levels of concerns about online information being inaccurate in India.

> "
> *"There is a lot of information on YouTube, so when you have internet data, you search for videos of discussions about that topic because they are many different discussions. So you listen to what they have to say. Most of the times the information in those videos is false because some people post videos to just get followers.."*
>
> — OWNER, 18, NYARUGENGE, RWANDA

YOUNG PEOPLE VERIFY ONLINE INFORMATION WITH OFFLINE SOURCES

In all geographies, adolescent girls and young women verified, discussed, or confirmed digital SRHR information with offline confidantes, such as trusted peers and family members from whom they do not fear judgment. Through the validation workshops, it was found that adolescent girls and young women trust offline SRHR information more than online sources because they can ask follow-up questions. However, fear of judgment and stigmatization precludes them from approaching offline sources in the first place.

In India, friends were by far the most popular source of information and verification. Adolescent girls and young women consult married friends to find out about topics like sex and contraception. Female family members are also information sources because they are seen as having experience dealing with these topics.

> "
> *"I might be seated and conversing with friends, and the topic is related to something I read about. The topic might have pleased me very much and someone else might have also read about it. So, at that moment, we might discuss it with my friends and confirm that it's true."*
>
> — BORROWER, 17, MUSANZE, RWANDA

In Rwanda, participants had various confidants and would choose friends, schools, and parents as sources of information. Some adolescent girls and young women in Rwanda also spoke about sourcing information from a quarterly print magazine, a radio talk show, and a radio drama. Participants in both India and Malawi were less likely to use school as a source of information. Those in India said that they would only approach female teachers if they needed to. Adolescent girls and young women in Malawi placed particular emphasis on youth clubs (also referred to as youth groups) as a space to gather and discuss issues around SRHR.

The role of boyfriends, husbands, and sexual partners was only discussed In India. Participants spoke about relying on their boyfriends or partners for information related to sex, contraception, and pregnancy because they trusted those they were intimate with.

"Seeking advice from a health center, clinic, or health professional" was selected as the third most popular way to verify information across all locations (after sharing with peers and talking to parents). However, data from qualitative questions and validation workshops did not corroborate this finding. With the exception of some participants in Malawi, adolescent girls and young women did not actually use clinics or hospitals for the purpose of verifying or collecting SRHR information, and they spoke repeatedly about fear of judgment as a barrier to visiting clinics.

"

"She can get the information when she is talking to her friends or if she is comfortable with her parents, she can ask them what is bothering her, or the youth groups where people meet and talk about some issues to do with SRHR and she can ask some questions."

— OWNER, 24, MUSANZE, RWANDA

"I don't search for sex because I get most of the information from my husband. I don't search for pregnancy because I get the information from my doctor. I don't search for abortion and the place of it because my husband uses the protection so there are no chances to get pregnant. The same is for HIV/AIDS because I don't go out much, don't visit the clinic, or go nowhere."

— OWNER, 23, JAIPUR, INDIA

DO ADOLESCENT GIRLS AND YOUNG WOMEN ACT ON THE SRHR INFORMATION THEY FIND DIGITALLY?

SHARING TO INCREASE KNOWLEDGE

In all three locations, sharing information to increase friends' and other young people's knowledge is the main way that adolescent girls and young women act on the information they find via mobile phones. Some adolescent girls and young women also share with family members and, in a small number of cases, with partners. Participants in India mentioned they are likely to share information with their sisters.

Adolescent girls and women mainly share information online through WhatsApp, Facebook, text messages, and phone calls. They share information in person at school, work, and youth club meetings.

There was variation across locations regarding how willing adolescent girls and young women were to share the information they found online. This is important given that sharing inaccurate and false information may exacerbate myths and misconceptions around SRHR. Adolescent girls and young women in India and Rwanda shared information depending on levels of trust in the content, whereas participants in Malawi reported sharing more freely. In Malawi, sharing information was seen as a responsibility or a duty towards others who may need the information but cannot access it.

"

"I would first consider where I got the information from or whom I got it from and whether they are qualified in that field. At that point, I could take my time and share it with my friends because I'm sure it will have no negative effect on them."

— OWNER, 18, NYARUGENGE, RWANDA

"Some information is false information, which can harm us and that is why I don't trust it. And if someone asks me anything, I don't want to share false information with them."

— BORROWER, 18, JAIPUR, INDIA

"You can share the information that you get from the phone with your fellow youth so that if they do not have access to the information they can get it from you."

— OWNER, 17, LILONGWE, MALAWI

SEEKING SERVICES AFTER LEARNING ABOUT SRH ISSUES: SARAH'S STORY

The relationship between finding information online about an sexual or reproductive health issue that may need attention and physically visiting a health center is complex. When participants were confronted with a scenario in which a character, Sarah, sought information about her STI symptoms online, they almost unanimously stated that she should seek treatment. However, almost none believed Sarah actually would go get help. Participants said that stigma would prevent them from visiting clinics or even from buying basic supplies in person, such as sanitary pads. Participants' concerns about visiting a clinic included fear of judgment, lack of privacy, and worries about the discretion of health workers.

"

"What would stop her is that she had sex or whatever she did to get that disease, so she is ashamed and scared. Thinking to herself 'What if my family finds out before I tell them? Won't the hospital require details that they will reveal to my parents?' She will be afraid that many people will find out, yet it's in her best interest."

— OWNER, 18, NYARUNGENGE, RWANDA

Additionally, confirming participants' responses about their own information-seeking habits, respondents shared a disbelief that the character of Sarah would even look online for information about her symptoms in the first place because she should not be sexually active and would fear judgment if anyone found out about her search history. For these reasons, adolescent girls and young women also thought it was more likely that the character would keep it a secret and wait for symptoms to go away. Adolescent girls and young women in India mentioned being fearful of repercussions from their parents if they came forward with STI symptoms. Stigmatization is so pervasive that the impacts on adolescent girls and young women can be devastating. This includes being turned out of their homes and causing mental health issues.

The following quote exemplifies how powerful and detrimental stigma can be.

"

"Yes, she can go. If she doesn't have hesitation in her mind then she can easily go but if she thinks that she has done something wrong then she will be afraid of going and it might be possible that she can do suicide also without telling anybody."

— OWNER, 17, JAIPUR, INDIA
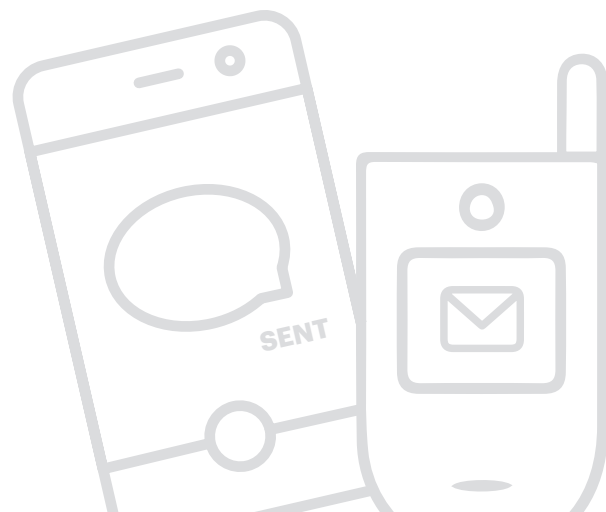
WHAT ARE THE OPPORTUNITIES OF DIGITAL TECHNOLOGY TO IMPROVE ADOLESCENT GIRLS' AND YOUNG WOMEN'S SRHR?

The validation workshop discussions asked participants to consider how digital technology could improve SRHR among adolescent girls and young women, dealing explicitly with challenges around privacy and the trustworthiness of online information. For many participants, it was the first time they had been asked to identify challenges and solutions around digital SRHR information.

Specific solutions adolescent girls and young women developed in each location can be found in the following section.

Overall, participants suggested digital solutions need to be socialized with young people and associated with existing offline sources where they might currently go for SRHR information, like radio shows. Across locations, adolescent girls and young women valued certified medical information and information linked to youth-friendly physical services. Additionally, adolescent girls and young women requested they need to learn how to search for and use online resources properly, and how to ensure their privacy on social media.

Across the three locations, adolescent girls and young women were clear that addressing structural barriers, regressive norms, and stigma through educational opportunities and community engagement is key to addressing SRHR knowledge gaps. Furthermore, groups in Malawi and Rwanda pointed to additional barriers to accessing SRHR information online, including limited mobile data and internet access.

**Validation workshop in Jaipur, India.
Photo taken by Aparna Raj.**

VALIDATION WORKSHOPS IN-DEPTH: COUNTRY CASE STUDIES

The following findings emerged from a combination of desk research and the validation workshops.

INDIA: AN INFORMATIVE APP, DESIGNED FOR AND WITH ADOLESCENT GIRLS AND YOUNG WOMEN

VALIDATION WORKSHOP DISCUSSIONS

Lack of formal SRHR education in schools, continued stigma, and cultural taboos around menstruation and sex in India lead to an acute need for accessible information and services. Adolescent girls and young women have mixed levels of knowledge about what their period is, how much bleeding to expect, menstruation-related symptoms, and how to delay their periods. Participants also had a lot of questions about what sex is and what happens during sex.

KEY ISSUES

Stigma around menstruation leads to harmful misconceptions about menstruation and cultural practices that negatively impact adolescent girls and young women. Participants recognized that multiple SRHR-related applications exist in India. However, due to various barriers, including accessibility and trust, participants were not using them. The challenge is to increase awareness of trustworthy applications or develop new digital platforms that youth actually use and find helpful.

ADDITIONAL STRUCTURAL BARRIERS TO ADDRESS

Adolescent girls and young women who participated in the workshops mentioned they found it challenging to access SRHR information on a shared device. They expressed they need to better understand online privacy and history settings. Additionally, awareness raising campaigns to destigmatize menstruation are needed.

DIGITAL SOLUTION

Adolescent girls and young women suggested developing an SRHR information application that is youth-friendly.

This would require the application to:

→ Be easy to use, discreet, and accessible at any time;

→ Have information presented in video format with no advertisements;

→ Contain testimonials and ratings of services from other users to increase credibility; and

→ Allow for online consultations with doctors offering prescriptions and referrals to physical programs and local clinics.

MALAWI: PRIVATE DIGITAL SPACES TO ASK SENSITIVE QUESTIONS

VALIDATION WORKSHOP DISCUSSIONS

Adolescent girls and young women mentioned they were able to gather SRHR information through the radio and at youth clubs. However, they did not feel able to discuss more sensitive topics, such as abortion, with peers and believe existing information on the topic in unreliable. Additionally, participants appeared to subscribe to myths and misconceptions about the side effects of contraception.

KEY ISSUES

Stigma around family planning and abortion, and lack of formal comprehensive sources of SRHR information, contribute to low contraceptive use rates, lack of knowledge about abortions, and where to get post-abortion care. There is also a need to increase confidence talking about sex and protective sexual behaviors, including condom use. Currently, there is a lack of internet-enabled SRHR solutions for young people.

ADDITIONAL STRUCTURAL BARRIERS TO ADDRESS

Adolescent girls and young women in Malawi highlighted the need for improved SRHR education and dialogue at the community level. Additionally, increased access to internet-enabled devices is needed.

DIGITAL SOLUTION

Adolescent girls and young women suggested creating online resources that have medically certified information and anonymized discussion forums to ask sensitive questions to health professionals. The resources would ideally increase communication skills, shift norms about sexual communication, and provide alternative mechanisms for individuals to gather pertinent information regarding their sexual behavior.

Participants suggested this requires:

→ Greater digital literacy to understand how to search for information and check privacy settings on discussion forums;

→ Comprehensive SRHR information provided in local languages with information on where to access services that provide contraception, safe abortions, and post-abortion care; and

→ Adequately trained health workers who are impartial and nonjudgmental to adolescent girls and young women enquiring about contraception and abortion.

**Workshop in Lilongwe, Malawi.
Photo taken by Martina Chimzimu.**

RWANDA: LINKING OFFLINE AND ONLINE COMMUNITIES

VALIDATION WORKSHOP DISCUSSIONS

Adolescent girls and young women indicated that they could access some SRHR information at school, on the radio, and in community centers and trusted local clubs. However, gender norms around sexuality and discussions about sexuality remain taboo, including with parents and partners.

KEY ISSUES

Despite having access to multiple offline SRHR information sources, adolescent girls and young women reported they lacked information on love, healthy relationships, puberty, and SRHR in general. Adolescent girls and young women also continue to have limited decision-making power over their SRHR.

ADDITIONAL STRUCTURAL BARRIERS TO ADDRESS

While many adolescent girls and young women in Rwanda have access to a phone, mobile data service is expensive, internet services are not always reliable, and digital literacy is low. Adolescent girls and young women need help to understand how to get online, use social media privately, and access information in efficient ways.

DIGITAL SOLUTION

Adolescent girls and young women suggested linking physical and digital community spaces to encourage the continuation of learning and discussion of material learned or overheard offline. This presents an option to ask follow-up questions in person.

Participants suggested this requires:

→ Having trusted social media platforms with improved resources that provide safe spaces to discuss content on key SRHR topics;

→ Having community health workers, clubs, and TV and radio promote trustworthy online information sources and encourage engagement with online services; and

→ Providing comprehensive sexuality education in schools and to parents to create an enabling environment for the transmission of SRHR information between offline and online communities.

**Workshop in Kigali, Rwanda.
Photo taken by Chance Mukamusoni.**

V

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

This research offers findings on the opportunities of digital technology to improve SRHR, from the perspective of adolescent girls and young women. The study highlights the importance of meaningfully engaging youth in the the development and execution of research and programs.

Results show that varied digital platforms are being used to explore SRHR issues. Information needs were wide-reaching, from basic questions about puberty, menstruation, and sex, to more detailed queries around abortion, contraception, and HIV/AIDS.

The confidentiality online spaces offer is a key reason why adolescent girls and young women turn to digital platforms to source SRHR information. When adolescent girls and young women cannot confirm the accuracy of information online, they keep the information to themselves or attempt to verify it with confidants, both of which can exacerbate myths and misconceptions.

When information is deemed trustworthy, adolescent girls and young women share and discuss with others what they have learned. The emphasis on using digital spaces for information sharing highlights the potential of leveraging digital platforms as spaces for advocacy, education, and awareness-raising campaigns around SRHR.

Improving digital literacy is needed in order to further unlock the potential of digital solutions for SRHR. Low levels of digital literacy contribute to adolescent girls' and young women's fears of being judged based on their search history and ability to find accurate information.

Stigma around SRHR continues to be pervasive and detrimental. **Stigma impacts adolescent girls' and young women's information-seeking behaviors, use of information found online, and willingness to talk about these topics.** Findings help highlight the complex, sometimes contradictory effects stigma has on participants' experiences related to SRHR.

RECOMMENDATIONS

Adolescent girls and young women were enthusiastic about connecting their online and offline worlds to make resources credible and practical. The study recommendations, directly informed by adolescent girls and young women in validation workshops, is included below. Recommendations from study participants are highlighted in boxes. To harness the power of digital platforms to improve adolescent girls' and young women's SRHR, governments, policymakers, civil society, content and application developers, and donors — working meaningfully alongside young people — should:

1

Ensure there is accurate and comprehensive SRHR information online, across varied digital platforms, and note when information is scientifically valid or medically verified.

MOST RELEVANT FOR: Governments, health professionals, civil society organizations (CSOs), and content and application developers

- There should be comprehensive SRHR information online in accessible formats that includes topics related to puberty, sex, love and relationships, and STI management and prevention in the preferred local languages and dialects.

- Information that is affiliated with respected and recognized health institutions, such as WHO, or sourced from health practitioners free of bias, should be marked and recognized as such.

- Digital platforms with verified information should be promoted via trusted offline resources. This includes print and audio media and existing youth-friendly medical and community services.

Validated by adolescent girls and young women:

- Across settings, medically verified information and webpages branded by clinics and providers are seen as marks of credibility, in particular for information on menstruation, safe sex, and STIs.

- In Rwanda, adolescent girls and young women recommended using popular radio stations and youth clubs to promote online platforms to increase confidence in online sources.

- In India, adolescent girls and young women suggested enhancing online resources with testimonials and rating systems from other adolescent girls and young women and by using brand ambassadors to promote and vouch for online services.

2

Link online SRHR information to appropriate youth-friendly medical and community services to raise awareness of trustworthy digital platforms and encourage follow-up with services.

MOST RELEVANT FOR: Governments, health professionals, CSOs, and content and application developers

- Engage with providers, community centers, youth clubs, and youth-focused organizations so they can help verify the accuracy of online information, amplify digital platforms that are trustworthy, and provide online services in confidential ways.

- Identify youth-friendly health centers that provide in-person services in respectful and confidential ways and socialize this information. This includes, when possible, adding testimonials and ratings from other adolescent girls and young women who have used these health centers to reduce fear of follow-up with services.

Validated by adolescent girls and young women:

- Linking digital resources to both online and offline community and health services that are credible and of good quality was seen as potentially important to make online platforms effective.

3

Meaningfully engage youth in the design of digital SRHR resources and testing of online SRHR platforms to make them accessible and youth-friendly and encourage their use.

MOST RELEVANT FOR: Governments, CSOs, and content and application developers

- Provide privacy, anonymity, and confidentiality settings on digital platforms, including disabling notifications. This will allow for safely discussing and sharing information online, and encourage use of SRHR-specific applications.

- Digital solutions should provide the space for adolescent girls and young women to ask questions and invite discussions between users through forums, message boards, and messaging functions such as chatbots.

- Create digital solutions with accessibility in mind, considering the principles of human-centered design, testing products with target adolescent girls and young women in a variety of formats and styles, and minimizing advertisements and functionality in areas with limited internet connectivity.

Validated by adolescent girls and young women:

- Digital solutions must emphasize privacy and discretion and have a youth-friendly look and feel.

- Adolescent girls and young women in India recommended short and concise videos, loud and attractive appearance of applications and platforms, and fewer ads to increase use and avoid "getting bored."

4

Provide digital literacy education and increase opportunities to privately access internet-enabled devices.

MOST RELEVANT FOR: Governments and CSOs

- Provide digital literacy education in and out of schools so adolescent girls and young women feel confident in identifying reputable sources of SRHR information privately. The curriculum should include guidance on: navigating the internet, downloading and managing applications, creating secure passwords, using privacy settings on social media, managing search histories on browsers, and ensuring safety in online forums.

- Install computers or other digital devices in schools, libraries, community and health centers, and youth clubs so adolescent girls and young women can access online information in spaces they frequent and in which they feel comfortable.

Validated by adolescent girls and young women:

- Make access to digital devices easier.

- Help adolescent girls and young women learn how to search and find the information they need.

- In India, adolescent girls and young women recommended that they be taught how to manage their privacy and understand when their activities can be seen by others on social media. Some instruction on steps like deleting a search history or managing privacy settings would be useful.

5

Increase investments in gender equality to help create an enabling environment for all people, including adolescent girls and young women, to seek out health information and reduce stigma around SRHR.

MOST RELEVANT FOR: Governments, CSOs, and donors

- Implement comprehensive sexuality education in schools — in line with the 2018 revised International Technical Guidance on Sexuality Education guidelines — to address misconceptions and myths surrounding SRHR.

- Conduct social and behavior change communications campaigns, including those aimed at boys and men, parents, religious leaders, health care workers, and others, to dispel myths and reduce stigma around SRHR.

- Sensitize community health workers and health professionals on SRHR topics and effective modes.

Validated by adolescent girls and young women:

- Adolescent girls and young women need to address structural barriers, regressive norms, and stigma in their offline worlds to ensure online solutions to SRHR issues are effective.

APPENDIX

TABLE 1: SAMPLE CHARACTERISTICS

		INDIA	MALAWI	RWANDA	TOTAL
AGE & PHONE OWNERSHIP STATUS Owner (O) Borrower (B)	Adolescent girls ages 15 to 18	17(O) 15(B)	14(O) 9(B)	14(O) 17(B)	**86**
	Young women ages 19 to 24	12(O) 15(B)	33(O) 4(B)	16(O) 3(B)	**83**
SCHOOL STATUS	Dropped out of school	2	7	2	**11**
	Attend primary school	2	3	0	**5**
	Completed primary school	0	2	40	**42**
	Attend secondary school	21	19	0	**40**
	Completed secondary school	0	24	5	**29**
	In post-secondary education	32	3	1	**36**
	Completed post-secondary education	2	2	2	**6**
EMPLOYMENT STATUS	Not in work	49	56	41	**146**
	In part-time work	8	3	7	**18**
	In full-time work	2	1	2	**5**
PRIMARY USES OF PHONE	Using Facebook	24	26	30	**80**
	Using YouTube	48	0	14	**62**
	Listening to music	27	20	17	**64**
	Making texts/calls	0	52	33	**85**
	Watching videos	26	15	3	**44**
PHONE TYPE	Smartphones	56	37	39	**132**
	Basic phones with access to the internet	3	22	11	**36**
	Not sure	0	1	0	**1**

1   "Lean Research," MIT D-Lab, accessed January 20, 2020, https://d-lab.mit.edu/research/lean-research.

2   "Engage Youth: A Discussion Paper on Meaningful Youth Engagement," Women Deliver, 2016. https://womendeliver.org/wp-content/uploads/2016/04/Meaningful_Youth_Engagement_Discussion-Paper.pdf.

3   "Accelerate Progress: Sexual and Reproductive Rights for All – Executive Summary," Guttmacher-Lancet Commission on Sexual and Reproductive Health and Rights, 2018, accessed January 20, 2020, https://www.guttmacher.org/guttmacher-lancet-commission/accelerate-progress-executive-summary.

4   Ann M. Starrs, Alex C. Ezeh, Gary Barker, et al., "Accelerate Progress: Sexual and Reproductive Health and Rights for All: Report of the Guttmacher–Lancet Commission," The Lancet 391, no. 10140 (2018): 2642-2692.

5   "WHO Recommendations on Adolescent Sexual and Reproductive Health and Rights," World Health Organization, 2018, accessed January 20, 2020, https://www.who.int/reproductivehealth/publications/adolescent-srhr-who-recommendations/en/.

6   "Having a Child Before Becoming an Adult: Exploring the Economic Impact in a Multi-Country Analysis," New York: Women Deliver and The Population Council, 2019. http://womendeliver.org/wp-content/uploads/2019/06/Women-Deliver-Population-Council-Report.pdf.

7   K.G. Santhya and Shireen J. Jejeebhoy, "Sexual and Reproductive Health and Rights of Adolescent Girls: Evidence from Low- and Middle-Income Countries," Global Public Health 10, no. 2 (2015): 189–222.

8   Sarah C. Keogh, Melissa Stillman, Kofi Awusabo-Asare, et al., "Challenges to Implementing National Comprehensive Sexuality Education Curricula in Low- and Middle-Income Countries: Case Studies of Ghana, Kenya, Peru and Guatemala," PLoS One 13, no. 7 (2018): e0200513. DOI: 10.1371/journal.pone.0200513.

9   Vincent Guilamo-Ramos, Jane J. Lee, Leslie M. Kantor, et al., "Potential for Using Online and Mobile Education with Parents and Adolescents to Impact Sexual and Reproductive Health," Prevention Science 16, no. 53 (2015): DOI: 10.1007/s11121-014-0469-z.

10 Venkatraman Chandra-Mouli, Joar Svanemyr, Avni Amin, et al., "Twenty Years After International Conference on Population and Development: Where Are We with Adolescent Sexual and Reproductive Health and Rights?" Journal of Adolescent Health, no. 56 (2015): S1–S6.

11 Jacqueline E. Dorroch, Vanessa Woog, Akinrinola Bankole, et al., "Adding It Up: Costs and Benefits of Meeting the Contraceptive Needs of Adolescents in Developing Regions," Guttmacher Institute, (2018), accessed December 13, 2019, https://www.guttmacher.org/fact-sheet/adding-it-meeting-contraceptive-needs-of-adolescents.

12 Ann M. Starrs, Alex C. Ezeh, Gary Barker, et al., "Accelerate Progress: Sexual and Reproductive Health and Rights for All: Report of the Guttmacher–Lancet Commission," The Lancet 391, no. 10140 (2018): 2642-2692.

13 Jacqueline E. Dorroch, Vanessa Woog, Akinrinola Bankole, et al., "Adding It Up: Costs and Benefits of Meeting the Contraceptive Needs of Adolescents in Developing Regions," Guttmacher Institute, (2018), accessed December 13, 2019, https://www.guttmacher.org/fact-sheet/adding-it-meeting-contraceptive-needs-of-adolescents.

14 Anna Maria van Eijk, M. Sivakami, Mamita Bora Thakkar, et al., "Menstrual Hygiene Management among Adolescent Girls in India: A Systematic Review and Meta-Analysis," British Medical Journal Open, 6:e010290 20.

15 Milena Soriano Marcolino, et al., "The Impact of mHealth Interventions: Systematic Review of Systematic Reviews," JMIR mHealth and uHealth vol. 6, 1 e23 (2018): doi:10.2196/mhealth.8873.

16 Anam Feroz, Farina Abrejo, Sumera Aziz Ali, et al., "Using Mobile Phones to Improve Young People's Sexual and Reproductive Health in Low- and Middle-Income Countries: A Systematic Review Protocol to Identify Barriers, Facilitators and Reported Interventions," Systematic Reviews, no. 8 (2019): 117.

17 "Health and Technology: What Young People Really Think," PATH, PMNHCH, Women Deliver, Foundation Botnar, 2019. https://pages.devex.com/rs/685-KBL-765/images/Health%26Technology_report_August2019.pdf.

18 "Health and Technology: What Young People Really Think," PATH, PMNHCH, Women Deliver, Foundation Botnar, 2019. https://pages.devex.com/rs/685-KBL-765/images/Health%26Technology_report_August2019.pdf.

19 "Health and Technology: What Young People Really Think," PATH, PMNHCH, Women Deliver, Foundation Botnar, 2019. https://pages.devex.com/rs/685-KBL-765/images/Health%26Technology_report_August2019.pdf.

20   Anam Feroz, Farina Abrejo, Sumera Aziz Ali, et al., "Using Mobile Phones to Improve Young People's Sexual and Reproductive Health in Low- and Middle-Income Countries: A Systematic Review Protocol to Identify Barriers, Facilitators and Reported Interventions," Systematic Reviews, no. 8 (2019): 117.

21   Krista Jones, Jeff Williams, Heather Sipsma, Crystal Patil, "Adolescent and Emerging Adults' Evaluation of a Facebook Site Providing Sexual Health Education," Public Health Nursing 36: 11– 17 (2019). https://doi.org/10.1111/phn.12555.

22   "ERT Initiative," Youth+Tech+Health, 2019. https://yth.org/#/projects.

23   Kylene Guse, Deb Levine, Summer Martins, et al., "Interventions Using New Digital Media to Improve Adolescent Sexual Health: A Systematic Review," Journal of Adolescent Health, no. 51 (2012): 535; Thomas L. Webb, Judith Joseph, Lucy Yardley, Susan Michie, "Using the Internet to Promote Health Behavior Change: A Systematic Review and Meta-Analysis of the Impact of Theoretical Basis, Use of Behavior Change Techniques, and Mode of Delivery on Efficacy," Journal of Medical Internet Research, no. 12 (2010): e4.

24   Nicole B. Ippoliti and Kelly L'Engle, "Meet Us on the Phone: Mobile Phone Programs for Adolescent Sexual and Reproductive Health in Low-to-Middle Income Countries," Reproductive Health 14, no. 1 (2017): 11. DOI: 10.1186/s12978-016-0276-z.

25   Jana Daher, et al., "Do Digital Innovations for HIV and Sexually Transmitted Infections Work? Results from a Systematic Review (1996-2017)," BMJ Open, no.3;7(11): e017604. (2017): DOI: 10.1136/bmjopen-2017-017604.

26   Milena Soriano Marcolino, et al., "The Impact of mHealth Interventions: Systematic Review of Systematic Reviews," JMIR mHealth and uHealth vol. 6,1 e23 (2018): doi:10.2196/mhealth.8873.

27   Milena Soriano Marcolino, et al., "The Impact of mHealth Interventions: Systematic Review of Systematic Reviews," JMIR mHealth and uHealth vol. 6,1 e23 (2018): doi:10.2196/mhealth.8873.

28   Nicole B. Ippoliti and Kelly L'Engle, "Meet Us on the Phone: Mobile Phone Programs for Adolescent Sexual and Reproductive Health in Low-to-Middle Income Countries," Reproductive Health 14, no. 1 (2017): 11. DOI: 10.1186/s12978-016-0276-z.

29   Robin Boyar, Deb Levine, Natalie Zensius, "TECHsex USA: Youth Sexuality and Reproductive Health in the Digital Age," Oakland, CA: ISIS, Inc. (2011), https://yth.org/wp-content/uploads/YTH-youth-health-digital-age.pdf.

30   A. Das, "Contraception and Pregnancy: What Bangladeshi Adolescent and Youth Are Keen on," pp. 125 ISSN: 0019-5456. (2017), https://www.nwo.nl/en/research-and-results/research-projects/i/50/14350.html.

31   "Switched On: Sexuality Education in the Digital Space," Category 8-Symposium, UNESCO, 2020. https://en.unesco.org/events/switched-sexuality-education-digital-space.

32   Anam Feroz, Farina Abrejo, Sumera Aziz Ali, et al., "Using Mobile Phones to Improve Young People's Sexual and Reproductive Health in Low- and Middle-Income Countries: A Systematic Review Protocol to Identify Barriers, Facilitators and Reported Interventions," Systematic Reviews, no. 8 (2019): 117.

33   "India National Family Health Survey NFHS-3 2015/16, 2017," International Institute for Population Sciences (IIPS), India, and ICF, accessed January 20, 2020, http://dhsprogram.com/pubs/pdf/FR339/FR339.pdf.

34   Vipan B Kumar and Pratibha Kumar. "Right to Sexuality Education as a Human Right". Journal of Family Welfare 57, n.2 (2011).

35   Shajahan Ismail, Ashika Shajahan T.S. Sathyanarayana Rao, and Kevan Wylie, "Adolescent Sex Education in India: Current Perspectives," Indian Journal of Psychiatry 57, no. 4 (2015): 333–37. DOI: 10.4103/0019-5545.171843.

36   Richa Karki and Cristina Espinosa. "Breaking Taboos: Menstruation, Female Subordination and Reproductive Health, the Case of India". Insights of Anthropology 2, n.2 (2018) DOI: 10.36959/763/491.

37   Ernestina Coast, Samantha R. Latoff, et al., "Puberty and Menstruation Knowledge among Young Adolescents in Low- and Middle-Income Countries: A Scoping Review," International Journal of Public Health, no. 64 (2019): 293–304. DOI: 10.1007/s00038-019-01209-0.

38   Anna Maria van Eijk, M. Sivakami, Mamita Bora Thakkar, et al., "Menstrual Hygiene Management among Adolescent Girls in India: A Systematic Review and Meta-Analysis," British Medical Journal Open, DOI: 10.1136/bmjopen-2015-010290.

39   Body of Knowledge: Improving Sexual and Reproductive Health for India's Adolescents. (USAID) 2017, accessed January 20, 2020, https://www.issuelab.org/resources/30116/30116.pdf.

40   "M-Sathi," Restless Development. https://challenges.openideo.com/challenge/youth-srh/final-review/m-sathi-a-mobile-based-application-for-comprehensive-sexuality-education.

41   "Malawi Demographic and Health Survey 2015-16," National Statistical Office (NSO) and ICF, Zomba, Malawi, and Rockville, Maryland, USA, 2017.

42   Chirwa Grames and Naidoo Devika, "Structural and Social Constraints in the Teaching of Life Skills for HIV/AIDS Prevention in Malawi Primary Schools," South African Journal of Childhood Education 4, no. 1 (2014): 62.

43   "Sexuality Education: A Ten-Country Review of School Curricula in East and Southern Africa," United Nations Population Fund and UNESCO, 2012. https://unesdoc.unesco.org/ark:/48223/pf0000221121.

44   Alister C. Munthali, et al., "Adolescent Sexual and Reproductive Health in Malawi: A Synthesis of Research Evidence," Guttmacher Institute, 2004. https://www.guttmacher.org/sites/default/files/pdfs/pubs/2004/12/01/or_no15.pdf.

45   Andrew Self, Samuel Chipokosa, Amos Misomali, et al., "Youth Accessing Reproductive Health Services in Malawi: Drivers, Barriers, and Suggestions from the Perspectives of Youth and Parents," Reproductive Health 15, 108 (2018). https://doi.org/10.1186/s12978-018-0549-9.

46   Rupali J. Limaye, et al., "Talking About Sex in Malawi: Toward a Better Understanding of Interpersonal Communication for HIV Prevention," Journal of Public Health Research, v1:317 (2012). http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.814.8082&rep=rep1&type=pdf.

47   Emily Jackson, Brooke Ronald Johnson, Hailemichael Gebreselassie, et al., "A Strategic Assessment of Unsafe Abortion in Malawi," Reproductive Health Matters 19, no. 37 (2011): 133–43. DOI: 10.1016/S0968-8080(11)37563-5.

48   "Country Profile: Malawi," Human Reproduction Programme, WHO, Global Abortion Policies Database, accessed January 20, 2020, https://abortion-policies.srhr.org/.

49   Alister C. Munthali, et al., "Adolescent Sexual and Reproductive Health in Malawi: A Synthesis of Research Evidence," Guttmacher Institute, 2004. https://www.guttmacher.org/sites/default/files/pdfs/pubs/2004/12/01/or_no15.pdf.

50   "Demographic and Health Survey 2015-16,". National Institute of Statistics of Rwanda, Ministry of Health, and ICF International, Rockville, Maryland, 2017. https://dhsprogram.com/pubs/pdf/FR319/FR319.pdf.

51   "Report: Malawi," Freedom House, 2018. https://freedomhouse.org/report/freedom-net/2018/malawi.

52   Tune Me, accessed January 20, 2020, http://mw.tuneme.org/.

53   "Demographic and Health Survey 2014-15," National Institute of Statistics of Rwanda, Ministry of Health, and ICF International, Rockville, Maryland, 2016. http://www.statistics.gov.rw/publication/demographic-and-health-survey-20142015-final-report.

54   "Rwanda Poverty Profile Report, 2016/17," National Institute of Statistics of Rwanda, Republic of Rwanda, 2018. https://environment.gov.rw/fileadmin/Environment_Subsector/Laws__Policies_and_Programmes/Useful_documents/EICV5_Rwanda_Poverty_Profile%20(1).pdf.

55   "National Family Planning and Adolescent Sexual and Reproductive Health Strategic Plan 2018–2024," Republic of Rwanda Ministry of Health, 2018, accessed November 29, 2019, http://www.moh.gov.rw/fileadmin/Publications/Strategic_Plan/Rwanda_Adolescent_Strategic_Plan_Final.pdf.

56   Maria Stavropoulou and Nandini Gupta-Archer, "Adolescent Girls' Capabilities in Rwanda: The State of the Evidence, Gender and Adolescence: Global Evidence," London: Overseas Development Institute, 2017.

57   Maria Stavropoulou and Nandini Gupta-Archer, "Adolescent Girls' Capabilities in Rwanda: The State of the Evidence, Gender and Adolescence: Global Evidence," London: Overseas Development Institute, 2017.

58   Maria Stavropoulou and Nandini Gupta-Archer, "Adolescent Girls' Capabilities in Rwanda: The State of the Evidence, Gender and Adolescence: Global Evidence," London: Overseas Development Institute, 2017.

59   Maria Stavropoulou and Nandini Gupta-Archer, "Adolescent Girls' Capabilities in Rwanda: The State of the Evidence, Gender and Adolescence: Global Evidence," London: Overseas Development Institute, 2017.

60   "Privacy International, 114th Session," Privacy International, Human Rights Committee: The Right to Privacy in Rwanda, 2015. https://privacyinternational.org/sites/default/files/2017-12/PI%20Rwanda%20submission.pdf.

61   Yiannis Theodoru, Ken Okong'o, and Erdoo Yongo. "Access to Mobile Services and Proof of Identity 2019: Assessing the Impact on Digital and Financial Inclusion," GSMA, (2019). https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/ProofofIdentity2019_WebSpreads.pdf

62   Elisee Mpirwa, "Government Outlaws Use of Cell Phones in Schools," New Times, 2018. https://www.newtimes.co.rw/news/government-outlaws-use-cell-phones-schools.

63   "Real Girls, Real Lives, Connected: A Global Study of Adolescent Girls and Young Women's Access and Usage of Mobile, Told Through 3000 Voices," Girl Effect, 2018, accessed January 7, 2020, https://prd-girleffect-corp.s3.amazonaws.com/documents/GE_VO_Full_Report-compressed.pdf.

64   Megan Bontempo, et al., "Cybergirl Rwanda: Using Human-Centered Design to Reach Youth: Solutions to Improve Sexual and Reproductive Health," UC Berkeley Adolescent Health and Emerging Adulthood, 2018. https://mcah.berkeley.edu/sites/default/files/cybergirl_rwanda_-_bontempo.pdf.

65   "Real Girls, Real Lives, Connected: A Global Study of Adolescent Girls and Young Women's Access and Usage of Mobile, Told Through 3000 Voices," Girl Effect, 2018, accessed January 7, 2020, https://prd-girleffect-corp.s3.amazonaws.com/documents/GE_VO_Full_Report-compressed.pdf.

66   "International Technical Guidance on Sexuality Education: An Evidence-Informed Approach," UNESCO, 2018. https://unesdoc.unesco.org/ark:/48223/pf0000260770.

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