

Web 2.0 Technologies for Accessing Reproductive Health Information Amongst the Youth in Kenya

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Abstract: *As young people pass through puberty and adolescence, health needs related to sexual and reproductive health arise. Adolescents and youth have been perceived to have few health needs and little income to access to health services. As a result, they have generally been neglected by the health systems. In Kenya, inadequate dissemination and implementation of existing policies have further hampered the successful implementation of adolescent and youth sexual and reproductive health (AYSRH) programs. If left out, the youth will lack of information may result in behaviors that may affect their future lives. Several attempts have been made by the government and another stakeholder to ensure adequate dissemination of reproductive health information to the youth; however, due to limited resources, the information is still inadequate. With web 2.0 technologies wide adoption by the youth, these technologies can be harnessed to fill the gap. This study sought to find the use of web 2.0 technologies in the provision of the of reproductive health information to the youth. The study found out that Facebook is the most widely used web 2.0 technology followed by WhatsApp. the study also found out that as much as the technologies have a potential in reaching the youth, caution must be exercised not to expose the youth to security breaches while online.*

Keywords: *Web 2.0, Social Networking Sites, Reproductive Health, Preference*

I. INTRODUCTION

The Web 2.0 is the new generation of the Internet that allows content and applications to be created by most Internet users through participation and collaboration. The technologies are often labeled as social media and user-generated content (Kaplan & Haenlein, 2010; Dooley, Jones, & Iverson 2014). Other researchers have used the term social media networks (Bik, & Goldstein, (2013); Edosomwan et al.,(2011); Bik, & Goldstein, 2013), social networking (Lenhart, & Madden,(2007); Boyd, & Ellison, (2007); Vickery, & Wunsch-Vincent, (2007)), with a new web 3.0 technologies being a hot topic in research (Hendler, 2009).

The web 2.0 provides a new avenue that if adequately exploited can act as the bridge and deliver the much needed Sexual and Reproductive Health (SRH) information to the youth effectively which this research seeks to explore. The popular web 2.0 technologies include:- Facebook, Twitter, Instagram, SnapChat, WhatsApp among others. According to Lenhart, (2009), by the age of 15 years, most (77%) of the teenagers already have social networking sites profiles (SNS).

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Past research has indicated these youths are always online either looking for information or entertainment. Those searching for health information account for 31% with 17% searching for sensitive health topics such as drug use, depression, and sexual health (Lenhart, Purcell, Smith, & Zickuhr, 2010).

A study by FHI 360/PROGRESS and the Ministry of Health (2011), indicated that the youth form a significant proportion of the country's population. If their Sexual and Reproductive Health (SRH) needs are not addressed adequately, the country will suffer multiple consequences socially, economically, health and education.

The youth may result into risky sexual behaviors, early sexual debut, substance abuse, sexual and gender violence, multiple sexual partners, and inadequate access to and use of contraceptives including condoms for dual protection. The to undesirable outcomes of this include and not limited to unintended pregnancy, early childbirth, abortion, early marriage, and sexually transmitted infections including HIV(UNICEF, 2011).

The adverse outcomes curtail young people's ability to achieve their economic and social goals, which in turn affect the country's long-term development. (FHI 360/PROGRESS & Ministry of Health, 2011; Magadi, 2006; Makona et al., 2008).

The Provision of SRH services and promotion to young people in Kenya is mainly done via three types of service providers: Public or Ministry of Health (MoH), Non-Governmental Organisations (NGO) and Faith-Based Organisations (FBO). However, many challenges such low budget allocation, limited resources for better programming, inadequate physical infrastructure for provision of services, and inadequate Reproductive Health (RH) information for youth (FHI 360/PROGRESS & Ministry of Health, 2011).

The lack of the reproductive information has been identified as one of the predominant challenges facing the youth. The lack has been due to the challenges coupled with old information propagation models that have relied on the traditional top-down approach (Godia et al., 2014).

FHI 360/PROGRESS and the Ministry of Health (2011), recommended the exploration of emerging interventions such as using ICT to reach youth with SRH information and take the advantages of these technologies, which are already popular with youth. The study concluded that the youth need information on reproductive health that is targeted to the age group rather than that is targeted to the general public (FHI 360/PROGRESS & Ministry of Health, 2011). Boyar et al., (2011), asserts that majority of the youth prefer internet search engines and friends as a source of reproductive health information rather than their family members,

With most teenagers conceding that, the internet is the first stop if they have any questions regarding sex.

Center for Disease Control and Prevention (CDCP) have researched Adolescents, Technology, and Reducing Risk for HIV, STDs, and Pregnancy. The research concluded that incorporating technology and new media into prevention efforts can significantly improve adolescents' access to sexual health information, thereby providing innovative ways for promoting adolescent sexual health (Buhi et al., 2013).

In the wake of the "Web 2.0" phenomenon, public health communication strategies are also changing to match the increasingly important and rapidly evolving social media revolution (Newbold & Campos, 2011). This research is anchored on the study of uses of web 2.0 technologies in the dissemination of reproductive health information to the youth.

II. PREFERRED WEB 2.0 BY THE YOUTH

According to Facebook, there are 6.1 million Kenyans, which is up 1.8 million users registered last year. Nendo report puts the number of monthly active users at 2.2 million with a million daily active users. The surge is up from the 700,000 monthly active users estimated last year. Second on the list is WhatsApp which is a viral chatting platform in Kenya, and it is estimated to have 10 million users in Kenya while the likes of Instagram and LinkedIn are estimated to have 3 million and 1.5 million respectively (Itimu, 2016).

A. Facebook

Facebook launched in 2004, is the most popular social networking sites to date. Its users interact by updating their "status," writing on other members "walls," or sending direct personal messages. Users can create and join interest groups, 'like' pages, import and search for contacts, and upload photos and videos. Recently, Facebook lives, a feature that allows for posting of live photos was added. Notably, more than 350 million Facebook users access their accounts via their mobile phones. Among university students, a study by Mugeru (2015) established that Facebook was the most preferred SNS and attracts more users than other social networks; with the most friendly and interactive platform.

Studies indicate that students spend roughly 100 minutes per day on Facebook; with 82% of college students reported logging into Facebook several times a day (Knight-McCord, Cleary, Grant, et al., 2016). According to Facebook, there are 6.1 million Kenyans on Facebook (Bloggers Association of Kenya (BAKE) (2016).

B. Twitter

Twitter is a social networking and microblogging service. Twitter, a real-time information network that connects users to the latest information about what they find interesting was launched in 2006. Users communicate via "Tweets" which are short posts limited to 140 characters, also allow embedded media links. Twitter users can "follow" or necessarily subscribe to the updates of other users. Twitter's uniqueness is the use of a hashtag (#) preceding the topic of interest or discussion or event for instance #reproductive health. It is an online version of text-messaging with the

capability of sending the same message to several thousand people all at once (Ezumah, 2013).

Twitter is a great way to keep in touch with friends and quickly broadcast information about where you are and what you are up to. It can be used to broadcast latest news and blog posts, interact with followers; it enables easy collaboration and group communication (Reddy, 2014).

There there are 2.2 million monthly active Kenyans on Twitter. 1 million of them use Twitter every day (BAKE, 2016).

C. WhatsApp

WhatsApp messenger is a propriety cross-platform instant messaging client for smartphones. WhatsApp features simple, reliable messaging that uses an internet connection to communicate. Group chats, enables users to share messages, photos, and videos with up to 256 people at once. WhatsApp voice and video calls are cost-effective and international as they also use the internet. Users can send photos and videos on WhatsApp instantly. PDFs, documents, spreadsheets, slideshows and more can be sent without the hassle of email or file sharing apps. As of February 2016, the Facebook-owned WhatsApp most globally popular messaging application with a user base of up to one billion(WhatsApp Inc. 2016).

According to a study by Kaigwa, Madung, and Costello (2014), WhatsApp was the single defining trend of 2014 in Kenya. It features in many aspects and is expected to change many facets including business for the better. Social messaging, in general, has recently become a global phenomenon. WhatsApp has become an essential channel for person-to-person communication and has become a driver of conversations on other social media platforms as content shared on WhatsApp finds its way on Twitter and Facebook (BAKE, 2016).

The high usage of WhatsApp among the youth is attributed to its high popularity among the youth, availability of affordable internet which makes internet-based communication prominent; availability of free Wi-Fi within most universities; Cellular service providers have lowered cost bundles especially for social media (such as Airtel's Unlimited bundles) making them cheaper than text-based messaging.

D. Instagram

Instagram is an application that allows users to take pictures and videos and share them on a variety of social networking platforms. Facebook owns it. There are an estimated 3 million Instagram users in Kenya (BAKE, 2016).

Instagram is a name coined by combining the words "instant" and "telegram." It facilitates the sharing of images and photos on multiple platforms and services seamlessly. Image filters transform photos into professional-looking snapshots. Also, uploading is made fast and efficient. Photos can be shared on Flickr, Facebook, and Twitter and Foursquare. Many 'selfies' or self-portrait shots are shared via Instagram. On Instagram, a user can follow other users' photo streams as they post them and you can be followed back by those users (or other users) as well.

Users can search for friends by name or find friends that are already connected to you on other social networks like Facebook or Twitter. Users can follow a person, like or comment on photos and browse to find new users to follow and creative photos to look at (Reddy, 2014).

E. Snapchat

Snapchat is an application for iPhones, iPads and Android devices. It allows subscribers to send to other subscribers' photos that expire in one to ten seconds. There are an estimated 100 million daily active users of Snapchat, about 70% of whom are women. More than 77% of college students use Snapchat at least once per day (Knight-McCord et al., 2016).

III. WEB 2.0 TECHNOLOGIES AND HEALTH INFORMATION ACCESS

One of the most distinctive characteristics of social media is its participatory nature that allows interested parties an opportunity to engage in an interaction. By encouraging contributions and feedback from everyone who is interested, social media blurs the line between media and audience (Mayfield, 2008). SNS allows people to share and engage with each other so that they enable content sharing (Rosso et al., 2008).

SNS encourages participatory contributions from users themselves, facilitating multi-way communication of information (Newbold, 2015). SNS is an accessible means of interaction for young adults, in which they create, share, and exchange information in virtual communities and networks. It allows participants to be the creators and consumers of content that is then discussed, modified and shared (Wong, Merchant & Moreno, (2015).

Health promotion specialists continually search for new and efficient methods of reaching people of various ages. According to Levac and O'Sullivan, (2010), The use of new technology, more precisely web 2.0 technologies, could be a key strategy in helping to solve some of the challenges faced by those in the health promotion field in decades. The study concludes that Health promotion agencies can increase the likelihood of reaching students by posting on a social networking site, rather than on a traditional government-run website.

According to Kreps and Neuhauser (2010), health behavior change requires changing shared social practices. The people's attitudes, values, and beliefs about health are a direct product of social interaction. Therefore, SNSs provides users the opportunity to connect to one another, which could thus prove favorable for positive health behavior change

Chu, et al. (2011) note that the primary motivations underlying SNSs choice are considered similar and are motivated by global desires including information seeking, entertainment, convenience, and social interaction. This study will focus on the popular SNS platforms based on recent studies. In Kenya for instance as noted by Koross and Kosgei (2016) the SNS are playing an increasing role in public awareness to educate, impart knowledge and skills to members of the society.

Trautner (2013) explored how social media and its technological development has led to new opportunities for

promoting health. The study found out that social media satisfy a role of socializing, creating content or information seeking; and can play an essential role in engaging individuals in health and could be a cost-effective option to include as a channel in the promotion of health.

Moreover, young people are often proficient users of online and networked technologies, and therefore the harnessing, expanding and promoting young people skills and understandings of SNS may hold the key to overcoming the issues of concerning reproductive health information dissemination to the youth (ACMA 2009c; Bauman 2007; Collin et al., 2011).

Levac and O'sullivan (2010), agree with these findings. They add that Social media holds considerable potential for health promotion and other health intervention activities, as it addresses some of the limitations in traditional health communication by increasing accessibility, interaction, engagement, empowerment, and customization.

Further, SNS increases the potential for easy access to preventive medicine, interaction with health care providers, inter-professional communication in emergency management, and public health.

A study by Heldman, Schindelar, and Weaver, (2013), indicates that using social media channels; health organizations can share relevant content where users are already spending their time. This becomes convenient for both parties. They can connect "starting where the people are" by using social media.

The access of SNS through mobile phone has been praised for being more convenient, straightforward, and do not rely on users to access computers at scheduled times. As mobile-phone users are likely to have their phone on them and within reach most of the time, it is easy for people to take part in interventions as they can participate at any time and anywhere. Such features are likely to be particularly advantageous for use with youth populations (Gold et al., 2010).

However, studies by Trautner, (2013) and Levac O'sullivan, (2010), suggests that a clear understanding of social media is needed to achieve successful health promotion results since social media offers fundamentally different rules of communication from the traditional communication channels.

IV. CHALLENGES OF WEB 2.0 TECHNOLOGIES AND REPRODUCTIVE HEALTH INFORMATION DISSEMINATION AMONG THE YOUTH

Although Web 2.0 technologies present an array of opportunities, caution should be taken when adopting them. The Web 2.0 tools allow and sometimes even encourages users to publish very personal information. Taraszow et al. (2010), notes that the youth, especially between the ages of 18 and 22, seem unaware of the potential dangers they are facing when entering real personal and contact information in their profiles while accepting 'friendship' requests from strangers. More and more the users demand more privacy for their profile,

In recent years we have seen improvements and revamped on SNS especially Facebook’s privacy options. There has been some debate on the Internet especially about the case of Facebook, because of concerns among the public on how Facebook could use personal data and what amount of this data could be reaching other third parties (Mastromatteo, 2010). Many youths have raised a red flag about data mining and targeted advertisements that are now being pushed to their social networking timelines.

According to Evers et al. (2013), time and funding are required to develop resources, foster technical skills, and management support to allow for ongoing moderation in the provision of content which secure, within the policy framework and risk-free to the youth.

Evers et al. (2013) argument are supported by an array of literature which asserts that it is crucial to keep information relevant, accurate, current, and accessible and to engage young people in the design, implementation, and evaluation of digital health campaigns (Livingstone & Brake, 2010). Newman et al, (2011) revealed although social media have presented an opportunity to communicate information the youth, sometimes these media may not be an effective venue for information that may see private such as health issues. This is because people like to maintain a positive identity as a healthy person in their social network and, consequently, they may be very selective about what they post on Facebook. When they want to be more open about their struggles and need for help, they prefer closed online communities that enable frank and open discussions. Similarly, Morris, Teevan, and Panovich (2010) and Zhang (2012) found that both adults and college students are reluctant to use social networking sites for serious health problems.

V. RESULTS

A. Media for Social Networking Sites Access

The study sought to find out the devices that the respondents had access to and were using for social networking. The survey established that majority of the respondents (89.6%) had access to and were using mobile devices (for example, mobile phones and tablets) to access SNS, further 56.7% of them had access to and were using laptops. A minority of the respondents, 27.7% had access to and used desktop computers to access SNS as presented in Table 1.

These findings show that most of the respondents had access to and preferred portable mobile devices that they used to access SNS. These findings are in line with those of Gold et al., 2010) who elaborated that mobile devices have features that are particularly advantageous for use with youth populations such as being more convenient, straightforward, and do not rely on users to access computers at scheduled times.

Table 1: Access to the Device(S) For Accessing SNS

Medium	Frequency	Percent
Mobile device (phone, tablet)	275	89.6
Laptop	174	56.7
Desktop computer	85	27.7

B. The Frequency of Use of Social Networking Site

The researcher sought to find out how often the respondents logged into SNS to determine the general intensity of use of these platforms. Majority of the respondents 63% indicated that they used SNS daily, 33.8% of them used SNS hourly. A minority of them admitted to using SNS weekly (2.6%) and monthly (0.7%) as presented in Table 2.

These findings substantiation in line with those of Coyle & Vaughn (2008) who found out that the average college student visits their social networking three times per day.

Table 2: Frequently of Use of Social Networking Sites

Duration	Frequency	Percent
Hourly	103	33.8
Daily	192	63.0
Weekly	8	2.6
Monthly	2	0.7
Total	307	100.0

C. Preferred Sources of Reproductive Health Information

The study sought to find out the most popular sources of reproductive health information and respondents were asked to indicate their preferred source of reproductive health information. From the survey findings, the majority of the respondents (59.9%) preferred the internet while 33.2% preferred medical of a health practitioner. Only 20.8% of the respondents preferred to source reproductive health information from friends, family, and books as illustrated in Table 3.

Table 3: Preferred Source of Reproductive Health Information

Information Source	Frequency	Percent
Internet	184	59.9
Books	52	16.9
Friends/Family	64	20.8
Medical/Health practitioner	102	33.2

Findings from the qualitative research were not far from quantitative results. A key-informant 1, a communications lecturer indicated that:

“Given the access to mobile devices and affordable even free internet access, most youths have turned to the Internet including social media as a primary information source. They (youth) form the bulk of the social media users and use it to access a variety of information including reproductive health. They get this information from friends, groups, and pages they follow on social media.”



D. Preferred SNS Platform Used to Access Reproductive Health Information

The study sought to find out the most popular (preferred) social network site for accessing reproductive health information by the respondents. The study found out that Facebook was the most popular SNS with 55%, followed by WhatsApp with 34.2%. A minority of the respondents used Twitter (5.8%), and Instagram (4.9%) as illustrated in Table 4.

These findings concur with Muger (2015), who found out that Facebook was the most preferred SNS and attracts more users than other social networks and therefore it is the most friendly and interactive platform among university students. A study on social media use by the youth by Lenhart (2015) revealed that 66% of the respondents used Facebook. These findings reveal that Facebook is the most SNS among the youth both for general use and for accessing reproductive health information.

Table 4: Social Network Platform used for Reproductive Health Information

SNS Platform	Frequency	Percent
Facebook	169	55
WhatsApp	105	34.2
Twitter	18	5.8
Instagram	14	4.9

The findings were in line with the Key-Informants 1. Communication lecturer in an interview affirmed that:

“Facebook is the most popular social networking site, I, therefore, would not be surprised if this popularity boils over to for health information. It (Facebook) is popular because of the many features it has to offer, and it is easy to use. There are groups, pages and people that are dedicated to specific topics including health information these among other reasons make it popular compared to the others. WhatsApp is also gaining popularity especially for people who know each other in the real world. I do not see a situation where the youth would change their preferred social networking site just because they are seeking reproductive health information. They, however, could use pseudo accounts.”-Communication Lecturer

E. Type of Reproductive Health Information Sought on Social Networking Site

The study proceeded to interrogate the type of reproductive health information respondents looked for from these SNS. As presented in Table 5, the majority of the respondents (51.1%) looked for reproductive health problems and infections. Other significant health information sought from SNS were symptoms and diagnosis (39.4%); personal research and second opinion (33.2%); and experiences of peers, and others in reproductive health matters (31.9%). Other information sought was regarding pregnancy prevention and contraception (29.6%); medication details for reproductive health matters (27%); and reproductive health care providers and hospitals/clinics where one can physically (23.8).

Table 5: Type of Reproductive Health Information Sought From SNS

Health information type	Frequency	Percent
Reproductive Health problems and infections	157	51.1
Reproductive Health symptoms and diagnosis	121	39.4
Pregnancy prevention/contraception	91	29.6
Experiences of peers, and others in reproductive health matters	98	31.9
Personal research and a second opinion on reproductive health	102	33.2
Medication details for reproductive health matters	83	27
Reproductive health care providers and hospitals/clinics where one can physically go to for reproductive health	73	23.8

An interview with a Key-informant 2, a health officer collaborates with the study findings. The informant noted that:

“The youth in most cases will look for information they consider private and or embarrassing from social media. This information includes reproductive health infections, symptoms, contraception and pregnancy and other personal research on reproductive health matters”.

A Key-informant 3. The counselor added that:

“The youth are in a phase in their lives where they are conscious about how others perceive them. Since they are going through reproductive health development and are experimenting, they are constantly looking for not just information about health but also what their peers are going through and comparing all this information. Social media provides them access and ability to do this. Top on their search list would be sexual and reproductive health infections details, and topics considered stigmatized by the society such as contraception, STIs and. Those with pre-existing reproductive health conditions will predominantly search for information about them”.

F. The extent of Use of Social Networking Site to Access Reproductive Health

The study sought to establish the extent to which the respondents preferred to use SNS for access to reproductive health information. The findings of the study indicated that 45% of the respondents used SNS to access reproductive health to some extent while a significant 31.6% used SNS to a great extent. A minority of the respondents used SNS for reproductive health to a very small extent and small extent with 11.8% and 11.4% respectively. This is presented in Table 6. All respondents in this study had used SNS to access reproductive health, what varied was the extent of use. According to Knight-McCord et al., (2016), college students log onto Facebook several times a day.



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This factor is attributable to the convenience of access through mobile devices which the students have on them most of the time.

Table 6: The Extent of the Use of Social Network Sites To Access Reproductive Health?

SNS Platform	Frequency	Percent
Very small extent	36	11.7
Small extent	35	11.4
Some extent	138	45.0
Great Extent	97	31.6
Total	307	100.0

A cross tabulation was conducted to analyze the relationship between SNS platform used and extent of use of SNS to

access reproductive health information. The results show that majority of the respondents used Facebook to access reproductive health information. More specifically, 73% of the respondents indicated that they use Facebook “to some extent and great extent” (n = 67+55 out of 168) to source for reproductive health information. Similarly, 83 respondents (n=49+34 out of 105), which represents 75% of WhatsApp users indicated that they use the platform to “some extent and large extent” to source for reproductive health information. In a ratio of 1 to 1.6 of Facebook to WhatsApp. In aggregate, this study indicates that majority of the respondents who used social media significantly to access reproductive health information used Facebook and WhatsApp. The results are as presented in Table 7.

Table 7: Relationship between Use and Extent of SNS in Accessing Reproductive Health Information

Which Social Networking Platform Do You or Did You use to Look for Reproductive Health Information? * To What Extent Do You Use Social Networking Sites to Access Reproductive Health?						
		Very small extent	Small extent	Some extent	Great Extent	Total
Which social networking platform do you or did you use to look for reproductive health information?	Facebook	23	23	67	55	168
	WhatsApp	11	11	49	34	105
	Twitter	2	0	11	5	18
	Instagram	0	1	11	3	15
Total		36	35	138	97	306

These findings echo those of the Key-informant 2s interview findings. The health officer echoed that:

The youth are already using the social networks for accessing reproductive health. Facebook is very popular at the moment, so they use it to look for reproductive health information while WhatsApp groups are favorite for those with similar interest mainly because of high interactivity, mostly they augment existing physical connections.

VI. DISCUSSION/CONCLUSION

The study found out that most of the respondents use mobile phone devices to access the social networking sites. The findings are in concurrence with a study by Gold et al., (2010), who elaborated that mobile devices have features that are particularly advantageous for use with youth populations such as being more convenient, straightforward, and do not rely on users to access computers at scheduled times. On the frequency of use, the study found that most of the respondents accessed the SNS daily and further on an hourly basis. The study sought to find out the preferred source of reproductive health information. The study found out that most of the youth (59.9%) preferred internet as the source of reproductive health information as compared to the clinics and family members.

The study found out that Facebook was the most popular SNS with 55%, followed by WhatsApp with 34.2%. A minority of the respondents used Twitter (5.8%), and Instagram (4.9%) this is not a surprise since Facebook is

currently the most popular social media platform across the world. The finding is in agreement with Mugeru (2015) and Lenhart (2015). It is worthy to note WhatsApp is gaining popularity. This is due to its thinness and therefore can run even in old phone models in addition to consuming fewer data bundles.

The study further found that the majority of the respondents went on social media to look for reproductive health problems such as infections, second opinions on health, peer experience, pregnancy prevention and contraception, medication details for reproductive health matters among others. The reproduction health information tops the list since the youth consider this type of information to be private and that they have the option to remain anonymous or get information from only trusted friends on the SNS platforms. The researcher finally compares the use and the extent of use of SNS for reproductive health information. The study found that majority of the respondents used SNS extensively for access of reproductive health information. In aggregate, this study indicates that majority of the respondents who used social media significantly to access reproductive health information used Facebook and WhatsApp. Although social media has shown the potential to fill the gap needed for communication of sexual and health information, the youth have the feeling that they are not actively involved in programs that target them and,

Thus compromising effectiveness and sustainability of interventions. The youth feel that there could be more involvement of the community and youth to adequately address issues specific to a community or population of young people (FHI 360/PROGRESS & Ministry of Health, 2011).

RECOMMENDATION

The study recommends that although SNS provide and a good platform for disseminating reproductive health information, the caution to be taken of the current technology trends when developing or adapting programs to determine their relevance and appropriateness for reaching target audiences. There is a need for Periodic assessment of favorite and new technologies and how they are being used by the youth. The study recommends further research on the factors that influence the choice of a particular web 2.0 technology for accessing reproductive health information.

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