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Health-related media use among youth audiences in Senegal

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SUMMARY

Lower- and middle-income countries (LMICs) are experiencing rapid changes in access to and use of new internet and digital media technologies. The purpose of this study was to better understand how younger audiences are navigating traditional and newer forms of media technologies, with particular emphasis on the skills and competencies needed to obtain, evaluate and apply health-related information, also defined as health and media literacy. Sixteen focus group discussions were conducted throughout Senegal in September 2012 with youth aged 15–25. Using an iterative coding process based on grounded theory, four themes emerged related to media use for health information among Senegalese youth. They include the following: (i) media utilization; (ii) barriers and conflicts regarding media utilization; (iii) uses and gratifications and (iv) health and media literacy. Findings suggest that Senegalese youth use a heterogeneous mix of media platforms (i.e. television, radio, internet) and utilization often occurs with family members or friends. Additionally, the need for entertainment, information and connectedness inform media use, mostly concerning sexual and reproductive health information. Importantly, tensions arise as youth balance innovative and interactive technologies with traditional and conservative values, particularly concerning ethical and privacy concerns. Findings support the use of multipronged intervention approaches that leverage both new media, as well as traditional media strategies, and that also address lack of health and media literacy in this population. Implementing health-related interventions across multiple media platforms provides an opportunity to create an integrated, as opposed to a disparate, user experience.

Key words: health literacy; ICTs; youth audiences; Africa

INTRODUCTION

People living in lower- and middle-income countries (LMICs) are experiencing rapid changes in access to and use of new internet and digital media technologies, sometimes referred to as Information and Communication Technologies (ICTs). The portability, interactive features and potential for around-the-clock connectivity of ICTs have revolutionized how information is exchanged and consumed. As is true in developed world contexts, ICT uptake and use in LMICs is influenced by factors such as education, age, income, residence, religion and culture, workplace factors and the existence of sufficient infrastructure (e.g. electricity, bandwidth, battery power and wireless access) (Fuchs and Horak, 2008; Buskens and Webb, 2009; GMSA, 2010; Kahn *et al.*, 2010).

ICT use is also dependent on the perceptions of these media, the degree to which they are integrated into the culture, as well as how they compete with or replace traditional media such as television, radio, film and television. Similar to other global settings, there is evidence from LMICs that these new technologies are supplementing, not supplanting, more traditional forms of media (Measure DHS, 2010).

Media technologies and health promotion

In LMICs traditional mass media methods have been leveraged for decades for health promotion and education activities (Creel *et al.*, 2011; Brown, 2012). However, increased access and use of ICTs along with continued communicable disease burden and a growth in chronic disease burden (Campbell and Campbell, 2007) have prompted many health-focused programs to use ICTs to deliver intervention activities (Ybarra *et al.*, 2006; Mitchell *et al.*, 2011; Napierala *et al.*, 2011; Massey *et al.*, 2013a). For example, mobile phone-based health interventions in LMICs (particularly in sub-Saharan Africa) have focused on strategies to improve adherence of antiretroviral treatment and, more broadly, HIV/AIDS-related research and program implementation (Napierala *et al.*, 2011).

ICTs have the potential to impact public health in multiple areas, including information seeking, health-care follow-up, data storage, interactive health messaging and professional development (Andersen *et al.*, 2012; Leow *et al.*, 2012). These technologies have transformed health promotion activities to better communicate information to intended audiences, provide forums for community discussion, offer resources for accurate and reliable health information and engage program participants with interactive content and messages (Buskens and Webb, 2009; Barry *et al.*, 2013; Massey *et al.*, 2013a). While the implementation of such programs is increasingly common in the LMIC context, more research is needed to better understand how people are using these methods and whether these new media facilitate improved health outcomes.

Setting

Senegal, like many other West African countries, has a rich history of both oral and written communication based on its roots as a cultural and trading hub for over a millennium. At present, Senegal is a leader in the adoption and use of ICTs in West Africa, and has experienced a proliferation of mobile phone use over the past 4 years—in 2012 there were 88 mobile subscriptions per 100 people compared with 46 mobile subscriptions per 100 people in 2008 (World Bank, 2013). Moreover, mobile phone use at the household level is nearly ubiquitous in both urban and rural settings, as 95% of urban households and 82% of rural households own a mobile phone (Measure DHS, 2010). Additionally, homes, schools, workplaces and health-care settings continue to expand their reliance on digital communication more generally.

In the latter half of the 20th century before the advent of new media, people relied mainly on traditional forms of media, including radio and television, books, newspapers and word of mouth for information exchange. These traditional media continue to be widely used throughout Senegal, though access and utilization patterns vary based on geography as well as gender. The urban/rural gap in household radio ownership is less pronounced than the gap in television ownership: 77 and 71% of urban and rural households, respectively, have access to a radio, compared with 80 and 26% of urban and rural households, respectively, that have access to a television (Measure DHS, 2010). The percentage of urban residents who listen to the radio at least once a week (77% of men and 69% of women) is similar to the percentage of rural residents who listen to the radio (69% of men and 57% of women). However, for television viewership, while 93% of urban men and 88% of urban women watch television at least once a week, only 52% of rural men and 37% of rural women do likewise (Measure DHS, 2010).

For this study we are focussing on youth audiences in Senegal, who we define as older adolescents and young adults aged 15–25. Like their parents, youth in Senegal used impersonal broadcast media and interpersonal means to communicate prior to the adoption of new media formats. Similar to their peers worldwide, younger people in Senegal are more likely to adopt and use ICTs and subsequently drive the diffusion process (Rogers, 1995). The purpose of this study was to better understand health literacy and media utilization in this population and specifically how younger audiences are navigating between traditional and newer forms of media technologies. With a particular focus on how youth obtain, process and apply health-related information, findings from this study can be used to inform health-related interventions that use traditional, as well as newer forms of

media. Echoing an earlier call to match available health programs and resources with the needs and preferences of health-seeking behaviors of young people in LMICs (Hughes and McCauley, 1998), findings from this study not only provide general utilization patterns, but also highlight potential gaps, pathways and intervening factors that facilitate access and use of both traditional and newer ICTs for this important audience.

METHODS

Research design and sampling methodology

Senegal was chosen as our study site because it is a leader in ICT adoption in West Africa and the authors have worked collaboratively in this arena in Senegal (Massey *et al.*, 2013a; World Bank, 2013). Focus group discussions were used to examine general attitudes and behaviors, as well as motivations and barriers to media access and use in Senegal. Based on social, cultural and economic factors in Senegal, two strata were identified to inform the focus group sampling methodology: gender (girls and boys) and urban or rural residence (in Dakar and outside of Dakar). Gender was an important stratum due to cultural and economic factors that contribute to differences in access and use of media and information technologies (Buskens and Webb, 2009; GMSA, 2010). Stratifying by urban or rural residence was also important as participants from the capital city, especially Dakar, may have differential access to new media technologies or health information compared with their counterparts from outside of Dakar.

Based on the sampling strata developed by the study team along with existing networks with study authors (T.D., A.R.), 26 locations were identified as potential study sites. Sixteen sites (eight in Dakar and eight outside of Dakar) were included in the final study sample based on schedule availability as well as interest to participate in this study. Among the eight outside of Dakar, four were conducted in Ziguinchor, two in Fatick and two in Mbour. The decision to vary the number of sites per region reflects a sampling methodology that is proportionate to population size; that is, the larger cities of Dakar and Ziguinchor included more focus group discussions to reflect a larger youth population than smaller communities of Fatick and Mbour (Measure DHS, 2010).

Study sites included both high schools and community centers. Study staff worked with school and community center officials to recruit interested participants. Potential participants were given an informational sheet that detailed the study objectives and participant rights. All final participants consented to take part in this study. Participants were offered a beverage during the discussion (water or soda) as no financial incentive was given.

Participants and procedure

Sixteen focus group discussions were conducted in September 2012. Eight to 12 adolescents and young adults participated in each group discussion for a total of 169 study participants. Participant eligibility included the following: (i) ability to speak French; (ii) ages 15–25 and (iii) being in selected study strata (gender and residence). Four Senegalese moderators attended training in Dakar in August 2012 where they were oriented to the focus group guide and study procedures to standardize the style and manner of discussion-leading and data collection. Each of the focus group discussions were conducted in French and led by a moderator of the same sex. The focus group discussion guide was developed based on gaps in the literature that describe both general access and use of traditional and newer forms of media as well as use of media for health-related purposes among adolescent populations. Particular emphasis was placed on an expanded health and media literacy perspective that incorporates skills and competencies needed to obtain, evaluate and apply health-related information (Massey *et al.*, 2013b).

Based on field testing, the final discussion guide examined media use (both traditional and newer media formats) and general health issues relevant for youth populations. The guide then synthesized these ideas by presenting scenarios that allowed participants to describe in detail the application and use of media for health-related purposes, highlighting skills and competencies that we define as health literacy. Main sections included questions on media use, health concerns, health information seeking, as well as responses to two hypothetical scenarios, one that involved dealing with a respiratory infection and one that dealt with sexual development. Sample questions from the focus group guide can be found in Table 1.

Consent was obtained for all participants aged 18 years or older. For participants aged younger than 18 years, parental consent and participant

Table 1: Sample questions from the focus group discussion guide, Senegal, September 2013

Media questions
  – Which media or communication technologies do you use? (Computer? Cell phone? Radio? Television?
  – What media do prefer?
  – When do you watch television? At what time? Where? With whom? What problems do you encounter? (Question also asked for radio, cell phone, computer, and other media)
Health questions
  – How do you get information about your health?
  – What is the best way for you to find health information?
Scenario 1: respiratory infection
  – One of your friends asks your help to understand a new type of respiratory infection that you are unfamiliar with. How will you help him understand this infection? [Probe: Describe the steps to get the information. Do you think this is easy? Difficult?]
Scenario 2: growing up
  – During adolescence, there are many changes that occur, regarding your body, your relationships with your parents and friends, your feelings, your moods, how you are attracted to others, etc. Do you think that you are sufficiently informed or aware about these issues that have to do with how your body, relationships, feelings?
  – Your little brother or sister tells you that he or she experiences changes that you yourself did not experience when you were his or her age. How will you help him or her understand and manage these events?

assent were obtained. The UCLA Institutional Review Board and the Senegalese National Ethics Committee for Health Research (CNERS) approved this study.

Analysis

All focus group discussions were recorded with audio equipment and later transcribed verbatim in French. On the occasion when a participant spoke Wolof (Senegal's second official language), the bilingual transcriber translated the Wolof to French. A member of the research team (TD) spot checked Wolof to French translations to ensure proper translation. French transcriptions were then translated into English by a bilingual transcriber for coding and analysis.

Four study authors (J.G., D.G., P.M. and M.P.) read through all 16 transcripts to develop an understanding of overall content and themes. Using the focus group discussion guide along with media use models and communication theories (Palmgreen, 1984; Bryant and Zillmann, 2009), a codebook was developed and organized in a framework of 5 dimensions with 25 parent codes. The study authors (J.G., D.G., P.M. and M.P.) each coded eight transcripts; thus, two study authors independently coded each transcript. Four themes emerged that provide a framework for reporting on patterns and behaviors related to media use among adolescents in Senegal, with emphasis on health-specific media and technology use. They include the following: (i) media utilization; (ii) barriers and conflicts regarding media utilization; (iii) uses and gratifications and (iv) health and media literacy.

Study authors chose excerpts from the focus group discussions that illustrate these four themes. English excerpts were back translated into French by study authors (P.M., A.R. and T.D.) and compared with the original French transcript to ensure that meaning was conserved between translations. Variations based on gender (boys/girls) and locale (Dakar/other towns) are highlighted within each theme, providing a more nuanced understanding of attitudes and behaviors related to health information and media use.

FINDINGS

Sociodemographics

The average age of participants ($n = 169$) was 19.8 years with a range of 15–25 years. A similar number of boys ($n = 85$) and girls ($n = 84$) participated in this study. The majority of participants were from Dakar (54.4%), followed by Ziguinchor (21.3%), Fatick (13.6%) and Mbour (10.7%). Over one-third of participants did not finish nor attend secondary school (37.3%), compared with one-third who completed a secondary education (33.7%). Just under one-third of respondents did not provide a level of education (28.4%). About one-quarter of participants (24.3%) indicated that their father did not obtain any secondary education. Participant information is detailed in Table 2.

Media utilization

Youth in Senegal use a heterogeneous mix of media platforms, similar to youth in the

Table 2: Descriptive statistics of adolescent focus group participants, Senegal, September 2012 ($n = 169$)

Age, mean (SD)	19.8 (1.2)
Gender, *n* (%)	
Girls	84 (49.7)
Boys	85 (51.3)
Highest level of education, *n* (%)	
None	9 (5.3)
Primary school	28 (16.6)
Some secondary	26 (15.4)
Finished secondary	57 (33.7)
Higher education	1 (0.6)
Professional	0 (0.0)
No response	48 (28.4)
Father's education, *n* (%)	
None	12 (7.1)
Primary school	29 (17.2)
Some secondary	17 (10.1)
Finished secondary	9 (5.3)
Higher education	17 (10.1)
Professional	7 (4.1)
No response	78 (46.2)
Region, *n* (%)	
Dakar	92 (54.4)
Ziguinchor	36 (21.3)
Fatick	23 (13.6)
Mbour	18 (10.7)

developed world. Youth reported reading newspapers and magazines, watching or listening to traditional broadcast media (e.g. television and radio), often with other family members or friends. Television programs include news, sports and politics and also specific entertainment programs.

> I watch television with my parents when the news is on. [I also watch] reality television, American shows, documentaries, and films that are on in the evening after the news with my parents (Dakar, Girls).

Internet is also a part of their media diet, but everyday use depends on access. Only some households have computers with internet access; thus, youth often access internet in cyber cafes and use it for email or to complete school projects. A small and vocal minority also use social media such as Facebook and Twitter, mainly for meeting others. Such platforms are especially favored among those who have friends and relatives living abroad.

> I have the habit of going to the cyber cafe with a friend. We surf on Facebook, we connect on Skype, we talk with friends (Fatick, Girls).

Narratives from the rural focus group participants indicate that access and use of the internet use was generally more limited than in the urban areas.

> There is Twitter, Facebook but you know that we barely use these so it's not easy for us to know them (Ziguinchor, Girls).

An increasing number of youth have mobile phones, used for texting and calling, accessing the internet, instant messaging and email. Some use mobile phones for watching television, downloading music and listening to the radio. Mobile phones are much more accessible for many than computers.

> I listen much more to the radio with the mobile phone, more than the radio set (Ziguinchor, Girls).

> With the mobile phone I can have everything that I want because I don't have the time to go to the cyber cafe to go on the internet (Dakar, Girls).

> We don't know how much time we spend on the mobile phone. ... You can send 15 messages per day or until your telephone refuses to send messages and rejects it. You can send messages until your battery dies (Dakar, Girls).

Barriers and conflicts regarding media utilization

Barriers to media use manifest in various forms, including challenges related to availability, competition with other family members, as well as perceptions, attitudes and tensions about perceived appropriateness of use and content. Common barriers related to television availability include competing demands and having others in their homes who want to watch other programming, and insufficient outlets to accommodate everyone.

> Each day we have difficulties when wanting to watch the television. My house is frequented by a lot of my friends, and we don't want to watch the same programs .... I go to my aunt's where there are three televisions to watch shows that interest me (Dakar, Boys).

> When I want to watch television my brother asks me to change the channel because he wants to watch a sports program. I end up giving him the remote (Fatick, Girls).

Other competing household needs, such as having to do chores, not wanting to use electricity in order to reduce its cost or not having enough money for cyber cafes, impede access to television and internet.

I had a problem because for our school presentations, everybody had to do research on his or her own and then we do a synthesis as a group. Sometimes the connection [at the internet cafe] was not good and the [time] we can buy – around 1 and half hours – is not enough. As a group we have a lot more need (Dakar, Boys).

At home, my sister and I can surf the internet, but sometimes my mother asks us to turn it off as we are wasting electricity (Ziguinchor, Boys).

Barriers related to perceptions and attitudes are also present, with some respondents saying some programs can be inappropriate for young children or raise issues that families do not want to discuss (e.g. sexual content).

Yes, sometimes in the presence of children and even with mothers it's a little embarrassing when a movie shows some unorthodox things (Ziguinchor, Girls).

Privacy concerns are also raised during discussions. Many believe that overexposure on Facebook and other social media programs can harm their reputation.

Overall, there are positive sides and negative sides. There are a lot of people who are on Facebook and who expose their private life .... And there are some who profit to do bad with it (Dakar, Girls).

Conflicts and tensions in media use arise for youth audiences as they balance innovative and interactive technologies with traditional and conservative values. Social media sites, particularly Facebook, are viewed positively in that they allow youth to communicate with one another, yet they are also perceived as threats to adolescents' privacy and security. Several youth note that Facebook is an example of how more liberal views and practices in other Western cultures are now influencing Senegalese youth and culture:

There are advantages, but also inconveniences. At the beginning, there weren't these types of things on Facebook. People communicated and that's all ....with globalization people started to do anything on Facebook. People began to threaten people on it and ....use it for malicious purposes (Dakar, Boys).

[Young people] are influenced by Americans. They want to imitate them at all costs, do what they do and finally they find themselves with problems [referring to sexually transmitted infections] (Mbour, Girls).

Many youth are ambivalent about the influence of new media as it shows them other cultures and lifestyles, yet also poses threats to longstanding traditions and propriety.

Here in Africa, grandparents [traditionally discussed] themes of sexuality [with young people] that are taboo. This is why the majority of youth go on the internet, to their teachers, or amongst themselves to discuss what is sexuality and also the new changes happening in the body, menstruation ... etc. (Dakar, Girls).

At the same time that participants seem to desire greater communication and openness regarding sexual and reproductive health (SRH) issues, they also voice concerns regarding the content found on traditional media sources. Some television shows are seen as informative, whereas others are thought to be inappropriate:

Television brings me a lot, but I'm sometimes obliged to follow some films that I do not want to watch because the others only watch these certain films, and these films bring us nothing in life. On the contrary, it can pervert us (Dakar, Boys).

What the television brings me: on one hand it's positive, but on the other it has a negative side. The TV can influence children to watch negative things, if the children see it, they can think that it's what is good (Dakar, Boys).

Uses and gratifications

Uses and gratifications theory attempts to understand why people choose certain media to gratify their needs by identifying motives for media use (Katz *et al.*, 1974; Rubin, 2002). Findings indicate that the need for entertainment, information and connectedness drive type of media used among youth in Senegal.

Radio and television use is linked to news and entertainment—listening to songs, radio and television programs—as is internet use for downloading movies and communicating with friends and socializing. Mobile phones are also mentioned frequently as a means of listening to the radio and communicating with friends and family via voice and SMS texting. More than any other media source, mobile phones are also considered by some to be a status symbol and to 'reflect the personality of an individual'.

Regarding information needs, many participants report that the internet provides more comprehensive information and serves a broader, more

comprehensive set of uses than other media sources. This includes information gathering, sharing information with friends and entertainment via websites and social media sites like Facebook.

> The internet permits you to inform yourself, to diversify yourself; to summarize it helps us grow (Fatick, Girls).

Our findings suggest that not all health conditions lead to online or ICT use for information seeking. When asked about respiratory infection youth consistently reported that they would seek information directly from a medical professional. In contrast, SRH represents a major information need that new media technologies may address among this population. Adolescents want more to help 'guide them' and to prevent 'ignorance'. However, they often feel shy or ashamed when talking about or asking questions about sensitive issues such as SRH. Moreover, youth often find that parents, or those more 'experienced', are not well informed and cannot provide the appropriate information.

> Personally, I don't have enough information, because … here in Africa fathers and mothers don't have the habit of giving you enough information … You have questions sometimes, or you want to talk about sex, or you don't understand what is happening to you, but they don't inform you (Dakar, Girls).

The internet is mentioned as a means by which one could avoid this embarrassment and shame by confidentially asking sensitive questions, as if they were in front of a 'friend'.

> The first thing I do on the internet is to connect to social networks. Then sometimes I do research on certain topics such as sexuality. We are adolescents and we need to know certain things, yet we cannot talk with our parents because our education does not allow us to. In front of the computer, its like we are in front of a friend and we can ask them any type of question (Fatick, Boys).

Across all focus groups, we found many participants voiced the desire to be informed and also the desire to be connected to others in Senegal as well as throughout the world. This sentiment is mentioned as a key motivation when using all forms of media including radio, newspapers, television, internet and mobile phones.

> If I don't watch the news at least once during the day it's as if I'm cut off from the rest of the world (Ziguinchor, Girls).

Many of the respondents also voice this desire to be connected as they have friends or family members living in other parts of the country and the world.

> We don't all live in the same area. We cannot always see each other, so through Facebook we can find each other. If we all connect, we can discuss, and exchange ideas (Dakar, Boys).

Health and media literacy

In the context of communication delivered through the media, health literacy generally has to do with seeking health information as well as comprehending and verifying the information that is obtained. Media literacy, on the other hand, typically entails the subjective and critical assessment of media communication with regard to its influences, both intended and unintended, on attitudes and behaviors, also known as media effects. Overall, the Senegalese youth in our sample are more health literate than they are media literate. That is, many are knowledgeable about where to find information, often mentioning the internet, television and news media and have very specific preferences in that regard.

> I think we must help youth get good information and teach them how to get good information because in our days, there has been a very dazzling development of media and means for information (Ziguinchor, Boys).

However, many respondents often find too much health information.

> Sometimes you go on the internet to search for something on a disease … were are given lots of responses on Google, [but] you don't know which one to look at (Dakar, Girls).

The veracity of information is another important concern among Senegalese youth. Participants vary in their opinions concerning information obtained from the internet and other media, with both positive and skeptical viewpoints.

> People should create [internet] sites that are more reliable, because there are sites that have whatever on them, we don't even know what it is, it's not even information, we don't even know where it comes from (Dakar, Girls).

> I prefer the television because it's more secure. Information [on television] is not false, while the internet can have false information, even in newspapers (Dakar, Girls).

With regard to being critical of the media more generally and its effect on them, respondents are more ambivalent about what reliance on these forms of communication portend.

> I prefer the television, because I can hear what's being talked about and see it all, but when you watch the television, you can see if it's real or not. With the radio you can only listen. But with the television, you hear and you see (Dakar, Boys).

Others believe that what is broadcast on television or the internet reflects reality, whereas others feel that the media and especially popular programming has negative and pernicious impacts on youth and culture more generally.

> With internet, television, films, and soap operas our vision of adolescence and childhood is completely changed. We emulate the derogatory behaviors embodied by certain actors . . . especially pornography. And I find it sad (Ziguinchor, Girls).

> . . . On television there are many fake images. They never show things as they happen. Images are often arranged, for example the last time that [President] Macky went to visit the disaster, they showed beautiful images on one channel and almost the opposite on another (Dakar, Boys).

DISCUSSION

This in-depth qualitative study provides critical insights on the factors that affect demand for and utilization of traditional and new media technologies in Senegal, particularly concerning health information. Three key findings provide useful insight to inform future interventions.

First, study participants' narratives indicate that the media diet of Senegalese young adults is varied and comprised both traditional forms of media (i.e. radio and television), as well as newer forms of media (i.e. internet and mobile devices). Although there was some distinction in internet use between urban and rural areas, the exact composition of media consumption hinged on a variety of factors at the individual, household and broader community levels, including availability and accessibility of electricity, the desire to communicate and stay connected, and the desire to satisfy individual preferences for entertainment and specific media content. These findings suggest that sole reliance on only one 'type' of media—new or old—in a health intervention effort would be missing a significant proportion of the youth population in this setting. Furthermore, study participants indicate that while new media approaches can serve a useful function in health interventions for LMIC young adults, they should not be the sole strategy.

Secondly, study participants' narratives provide useful insights into strategies that may be most effective and needed when integrating media sources into health interventions. Senegalese young adults appear motivated to seek out knowledge and to be connected to the larger national and global communities, while simultaneously expressing concerns regarding privacy and negative influences on Senegalese culture as a result of these new media. Much like their Western counterparts (Skinner *et al.*, 2003), youth from LMICs at times struggle with the vast and complex nature of health information and new media technologies. Moreover, privacy concerns linked to the internet and new media are a challenge for youth in all cultures today because what used to be contained in one's immediate environment now has the potential to go viral. Findings suggest the need for youth to further develop and exercise new health and media literacies and abilities to navigate and evaluate the interactive, less-filtered world of new media technologies. The active involvement and integration of young adults' perspectives is essential in the development and implementation of health interventions that best fit the needs of young adults.

Thirdly, given the desire to use new media, as well as persistent use of traditional media, multi-level and multi-pronged intervention approaches are likely to be most effective. For example, participants' feelings of frustration and embarrassment in accessing reliable and correct information on SRH prompted many to access this information confidentially on the internet. At the same time, many voiced a desire to have face-to-face interactions with parents and elders. However, our findings suggest that parents are not perceived as effective gatekeepers in this culture for youth access to media. Parents and elders are perceived negatively, not willing nor having the skills to guide adolescents with respect to their media use or sexual issues. Moreover, computer access in schools continues to be limited, thereby limiting guided interaction with computers and preventing opportunities for media literacy training. Thus, programs that incorporate strategies at these multiple levels or entry points (i.e. the individual, family and school level) may be most effective. For example, a health program could simultaneously train young adults to critically

evaluate online information, as well as to coach and provide models to parents of ways in which to develop greater competency and comfort in initiating discussions and addressing concerns regarding SRH with adolescents. While such programs have been or are now in existence in Senegal (e.g. www. ongraes.org), funding limitations and short funding horizons have prevented these programs from scaling up, or even continuing proven, successful approaches.

The study had a number of limitations. Due to constraints in funding and time, we restricted study communities to specific geographic areas of Senegal. Some of the interviews with out-of-school youth included discussion in local dialects, thus necessitating an additional level of translation. Also, it is difficult to discern the extent to which participants were open and honest about sexual health issues. Thus, to minimize threats to validity of responses because of embarrassment or stigma, we ensured that the moderators were the same gender as the participants and were not so older than them, all focus group discussion were conducted in enclosed, private spaces and questions were framed as hypothetical scenarios rather than personal experience. Finally, while this is a study of the intersection of complex sociobehavioral, and developmental issues within a broader landscape of social change, we are limited to describing findings from our select group of youth at one point in time. There are many other considerations including historical, organizational, geographic and environmental factors not addressed in this study which, however, are worthy of more in-depth research. These findings support a growing body of literature examining the feasibility and impact of transmedia strategies. Transmedia strategies are implemented across multiple media platforms and leverage the power of each medium (i.e. television, radio, or other media platform), creating an integrated, as opposed to a disparate, user experience (Scolari, 2009). This strategic approach plays to the varied media use among Senegalese youth— health and broader social topics introduced through the television can be further explored through the use of mobile devices or trips to an internet café. Moreover, as evidenced through the tradition of oral communication and importance and influence of the family unit, integrating interpersonal strategies will strengthen transmedia activities in this setting. That is, building upon rather than supplanting traditional communication channels will only strengthen health promotion strategies in this setting.

Although this qualitative study provides in-depth insights from youth in several regions of Senegal, there is a need for larger, ideally population-based surveys to provide more information on media utilization, health information seeking and media literacy among youth. This is especially important in emerging markets, such as Senegal, where there has been an exponential increase in the availability and utilization of media, but very little investigation of the ways in which the population, particularly youth, are engaging with and critically evaluating the content of these new media.

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