ORIGINAL ARTICLE
IN SEXUAL HEALTH EDUCATION

"What's that on your phone?" The aftermath of parents finding sexual and reproductive health messages on their children's phone in coastal Kenya

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Abstract

Introduction: Digital health interventions allow young people to access information quickly and discreetly, but privacy remains a concern. This article explores what happens when a young user's privately-access Sexual and Reproductive Health (SRH) messages from a digital health campaign in Kenya are discovered by his/her parents.
Methods: This qualitative study took place in Mtwapa, Kenya. Participants were young people aged 15-24 and parents/caregivers of young people aged 15-24. Focus Group Discussions (FGD) with youth (n = 12 FGD, M = 48, F = 49) and caregiver (n = 4 FGD, M =14, F = 19), by using vignettes, explored perceived parental responses about their children accessing SRH information on mobile phones. 97 young people and 33 parent/caregivers participated.
Results and Discussion: Sociodemographic characteristics of participants revealed that phone ownership was higher among young men than young women, and particularly low among young women aged 15-17. Youth participants indicated that parents finding SRH messages on their children's phone would have a range of reactions, from positive to negative: supportive parents would appreciate the messages as a sign their child was being proactive about their health; negative reactions would stem from fear of the message recipient being sexually active. Parent participants accepted children accessing SRH information outside the home as an inevitability, and indicated that parents would cautiously accept or be fully supportive of their child accessing messages on their phone.
Conclusions: In the event that a digital health intervention's young user's privacy is compromised, these findings demonstrate that the fears of extreme adverse reactions on the part of parents are likely overstated. Specific considerations for future digital health interventions are proposed.

KEY WORDS: Adolescent; cell phones; digital health; health education; health promotion; parents; privacy; reproductive health.

Riassunto

Introduzione: Gli interventi di sanità digitale consentono ai giovani di avere accesso alle informazioni in modo rapido e discreto, tuttavia la privacy rimane un fattore di preoccupazione. Questo articolo esplora ciò che accade quando i messaggi sulla salute riproduttiva e sessuale di un giovane utilizzatore, nell'ambito di una campagna digitale di educazione alla salute in Kenia, vengono scoperti da uno o da entrambi i genitori.
Metodi: Questo studio di tipo qualitativo è stato effettuato a Mtwapa, in Kenia. I partecipanti erano giovani di 15-24 anni e genitori/caregivers di ragazzi di 15-24 anni. Gruppi di discussione con giovani (n = 12) e caregiver (n = 4), attraverso l'uso di vignette, hanno esplorato le reazioni percepite dai genitori riguardanti i ragazzi che hanno accesso ad informazioni sulla salute riproduttiva e sessuale attraverso i propri telefoni cellulari. 97 giovani e 33 genitori/caregiver hanno partecipato.
Risultati e Discussione: Le caratteristiche sociodemografiche dei partecipanti hanno rivelato che la percentuale di chi possiede un cellulare è più alta tra i giovani maschi che tra le giovani femmine ed è particolarmente bassa tra le giovani di età compresa tra i 15 ed i 17 anni. Secondo i giovani partecipanti, i genitori che scoprono messaggi riguardanti la salute sessuale e riproduttiva sul cellulare dei loro figli avrebbero un range di reazioni differenti, da positive a negative: i genitori supportivi apprezzerebbero i messaggi come un segno che i loro figli sono proattivi nei riguardi della loro salute; reazioni negative deriverebbero dal timore che il destinatario del messaggio fosse sessualmente attivo. I genitori partecipanti hanno accettato l'idea che i ragazzi accedano alle informazioni sullo stato di salute sessuale e riproduttiva al di fuori della famiglia come un fatto inevitabile ed hanno riferito che accetterebbero con cautela o sarebbero pienamente supportivi nei riguardi dei propri figli che accedessero a tale tipo di messaggi attraverso i telefoni cellullari.
Conclusioni: Questi risultati dimostrano che probabilmente è sovrastimata la paura di reazioni negative estreme da parte dei genitori, quando venga violata la privacy di un giovane partecipante ad un campagna di sanità digitale. Vengono fatte specifiche considerazioni per futuri interventi di sanità digitale.

TAKE-HOME MESSAGE

Mobile phones are a promising channel for delivering information to young people on the sensitive subject of sexual and reproductive health and are welcomed by both young people and their parents. To reinforce support from young people and their parents, campaigns should be forward-looking, empowering youth to be proactive about their health and futures.

Competing interests - none declared.

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INTRODUCTION

In Kenya, about 80 percent of population is below 35 years [1], and young people aged 15-24 constitute approximately 19 percent of the Kenyan population [2]. The most recent Kenya Demographic and Health Survey estimated that 15 percent of women aged 15-19 have already given birth and three percent were pregnant with their first child [3]. By age 18, 47 percent of women and 55 percent of men were reported to have had sexual intercourse [3]. Addressing the sexual and reproductive health (SRH) needs of young people pays dividends for them and their communities [4]. However, finding effective channels for communication can be a challenge, especially when barriers hamper young people's access to SRH information in facility settings [5]. Parents can be an important source of SRH information for young people and have traditionally played a substantial role in the gender and sexual health development of their children [6–8]. Unfortunately, parent-young person communication on SRH issues is often uneven and hindered by a number of factors. Parental monitoring and SRH communication can vary in different settings, depending on a young person's sex and age [6, 7, 9, 10]. Additionally, if parent-child conversations do take place, they may often be narrow in scope – focusing primarily on abstinence, HIV and pregnancy risks [10, 11]. Young people, therefore, turn to other sources through which they can access SRH information: peers, relatives, and – in recent years - technology. Rapid advances in information and communications technology (ICT), particularly mobile technology and the expansion of usage, have the potential to impact young people's development outcomes; mobile phones and social media offer one means of potentially improving outcomes for young people by enabling them to obtain and access information quickly and discreetly [12, 13].

However, privacy breeches by parents are a cause for concern and discussion among researchers, ethics boards, and designers of youth-targeted digital health interventions; and a subject on which little has been published in the literature. Therefore, as part of a broader formative study to develop a digital health intervention to deliver SRH information via mobile phone to young people in Kenya [13], we explored potential consequences of parental privacy breeches: specifically, what happens when a young user's privately-accessed SRH messages from a digital health campaign are discovered by their parents.

METHODS

ARMADILLO Study

This qualitative study was part of the Adolescent/Youth Reproductive Mobile Access and Delivery Initiatives for Love and Life Outcomes (ARMADILLO) Study [13] formative phase, the objectives of which were to finalize youth-targeted SRH content designed to be delivered on-demand via SMS (text message), and to determine the acceptability of the intervention. The study took place in Mtwapa, a peri-urban area in Kilifi County, located on the Kenyan coast. The participants were young people aged 15-24 and parents/caregivers/guardians with young people within this age group. Data was collected between August and October 2015. A total of 12 Focus Group Discussions (FGD) were held with 97 young people participating, 48 boys and 49 girls. Youth study participants were selected via random sample from a list of peers developed by youth peer educators. Within each FGD, participants were of the same sex and age range of each other; as such, three FGDs each were conducted for males aged 15-17; females aged 15-17; males aged 18-24; and females aged 18-24. Additionally, 4 FGDs with a total of 33 parents/caregivers (14 male and 19 female) of young people aged 15-24 were also conducted. Caregivers were selected via random sample from a list of households containing youth between the ages of 15-24. All FGDs lasted between 1.5 and 2 hours. Table 2 below summarizes the details of the parents/caregivers. FGDs were conducted in a mix of Swahili, English, and colloquial languages, based on the preference of partici-

pants. Participants discussed perceived parental responses to their children accessing SRH information on mobile phones; phone usage and sharing habits among young people; and sources of SRH information and source credibility. We incorporated a series of vignettes to help us understand acceptability - by parents and peers - of young people accessing SRH information via text messages. Youth participants were asked to consider two vignettes, described below:

Vignette 1*: Susan and Angela are 15-year old twins. Last week Susan accessed ARMADILLO [text messaging platform] for information on puberty and relationships. She has not yet had a boyfriend. She has received several texts. She has not deleted her messages from her phone.*
Prompting question: What would happen if Susan's parents saw the messages on the phone?

Vignette 2: *John is 20, has a girlfriend and has his own phone. He has accessed ARMADILLO for information on sex and sexual transmitted infections (STIs). He has received several texts. He has not deleted the messages from his phone.*
Prompting question: what would happen if John's parents saw the messages on the phone?

Parent/caregiver FGDs were provided with their own scenarios, in which the young people featured were tailored to be the same sex and within the same age range (either 15-17 or 18-24 years of age) as the participants' own children. Vignettes asked parents: 1) to consider the SRH information they would want their children to know if in a relationship; and then 2) to gauge their response if they were to find their children accessing SRH information on their phones:

Vignette 3*: James and Esther, who are both [fill in age group for this FGD depending on age range of participants' children] years old have been dating for three months.*
Prompting question: If you were their parents, what information about their relationship and health would you want them to know?

Vignette 4*: Pauline/Tony [gender determined by FGD composition] who is 16/21 [age determined by age range of participants' children] has a [boyfriend/girlfriend] for six months. [Pauline/Tony] used ARMADILLO to get information about sex and contraception. [She/he] has received several texts. [She/he] has not deleted the messages from their phones.*
Prompting questions: What would happen if Pauline's/Tony's parents saw the messages on the phone? What would they do? Say?

Analysis

Qualitative data from the FGDs were transcribed verbatim, translated into English, coded and analysed thematically using NVivo version 10. Using primarily the vignette data, framework analysis was used to code and identify relevant data characterizing parents' reactions to young people receiving SRH messages on their phones. Demographic information for study participants was collated using Microsoft Excel 2010.

Ethical consideration

Approval to conduct the study was granted by the Ethics and Research Committee, Kenyatta National Hospital/University of Nairobi, Kenya and the World Health Organization's Research Ethics Review Committee (WHO ERC) in Geneva, Switzerland.

RESULTS

Participant demographics, including phone ownership and sharing habits

Among youth participants (Table 1), most 18-24 year-participants were not currently in school; by contrast all 15-17 year-old male and 92% of 15-17 year old female participants were currently in school. When disaggregated by age grouping, the number of single (unmarried and not currently dating anyone) participants dropped precipitously between the males and females aged 15-17 (74% and 80%, respectively) and males and females aged 18-24 (44% and 42%, respectively). There were many more Muslim male participants than Muslim female participants. Most parent/caregiver participants (Table 2) were married, Christian, and had completed primary school or higher. Overall, youth male

participants (83%) were much more likely to own a phone than females (53%); this difference was almost entirely due to extreme differences in phone ownership between the sexes in the 15-17 year-old group, with 65% of males owning a phone, compared with only 12% of females. Among those young people who indicated that they had their own phone, similar percentages of male and female owners indicated that they did not share their phone with anyone (75% of males vs 73% of females). Young people with phones preferred sharing with people their age as compared to adults who included their parents/caregivers.

Unpredictable: young people's perceptions of parent reactions upon finding SRH messages on their youth's phone

Young people were uncertain as to how parents would react if they came across SRH messages on their phones, with perceived reactions ranging from very positive to very negative. Respondents indicated that parental reactions would depend on the type of parent a young person had, as well as the young person's ability to describe their intentions in accessing the messages.

"I see the best way is to sit her down and tell her about the platform. If he/she is an understanding parent, he/she will understand. For the not understanding parents they will view this as dirty. But, when you sit them [parents] down and explain to them well, they will understand." (Youth male, age 17, FGD 5).

Young people provided several reasons as to why 'understanding' parents would react positively to their youth accessing ARMADILLO messages. For example, young people noted parents might appreciate the messages as a conversation starter for a sensitive subject.

"The parent will congratulate John and explain to him what he [the parent] has seen so that he can protect himself from bad things." (Youth female, age 17, FGD 6).

*"This information is good, and in my opinion when Susan's parents get to find her accessing these messages, they will give her additional information." (*Youth male, age 22, FGD 3).

Young participants also felt that understanding parents would appreciate seeing their children being proactive about their health.

"…there are those [parents] who will be happy as their daughter is accessing so that she gains more knowledge." (Youth male, age 16, FGD 11).

"[There are parents] that are close to their children, so maybe when they see these texts they will have an idea their child is protecting himself [and] that's why he is accessing information." (Youth male, age 22, FGD 1).

In describing reasons why parents might feel unhappy finding SRH-related messages on their young person's phone, the most salient reason by far was that youth participants perceived that parents would think that their children were already sexually active (i.e., he/she was looking up information after the act):

"They will call her and scold her and also think she has a boyfriend and also she is pregnant or has HIV because of the topics she has been checking." (Youth female, age 20, FGD 14).

"They will suspect that he has those infections and instead of asking him and counselling him they will tell him to go to the hospital to [find out] if he has STI's or not." (Youth female, age 24, FGD 14).

Young participants also noted the age of the person accessing ARMADILLO messages to be associated with a parent's perceived negative response. Every example of perceived adverse reactions resulting in a young person actually being punished for having accessed messages were described in response to the vignette of Susan, the 15-year-old. Punishment ranged from confiscating phones to physical punishment:

"When those messages are seen by Susan's parents…for her, the phone will get snatched and the parents will think she has started engaging in sex." (Youth male, age 22, FGD 1).

"They will scold her and abuse her. There are some parents who don't want to know if you are doing something meaningful, so they will take the initiative of caning you first." (Youth female, age 17, FGD 10).

On the other hand, the vignette of John, the

Table 1. Sociodemographic and other characteristics of young people participating in the study, by sex (*N* = 97).

	Youth Males *N* (%)			**Youth Females *N* (%)**		
Age Range	**15-17 years** 23 (47.92)	**18-24 years** 25 (52.08)	**All (15-24 years)** 48(100)	**15-17 years** 25 (51.02)	**18-24 years** 24 (48.98)	**All (15-24 years)** 49 (100)
Currently in school	23 (100)	4 (16.0)	27 (56.25)	23 (92.0)	1 (4.17)	24 (48.98)
Highest level of schooling						
Some Primary	12 (52.17)	-	12 (25.0)	10 (40.0)	3 (12.50)	13 (26.53)
Primary Complete	-	2 (8.0)	2 (4.17)	5 (20.0)	5 (20.83)	10 (20.41)
Some Secondary	11 (47.83)	5 (20.0)	16 (33.33)	10 (40.0)	-	10 (20.41)
Secondary Complete	-	16 (64.0)	16 (33.33)	-	13 (54.17)	13 (26.53)
Some tertiary	-	2 (8.0)	2 (4.17)	-	3 (12.50)	3 (6.12)
Relationship Status						
Single	17 (73.91)	11 (44.0)	28 (58.33)	20 (80.0)	10 (41.67)	30 (61.22)
Dating/Friends with benefits	6 (26.09)	12 (48.0)	18 (37.50)	5 (20.0)	8 (33.33)	13 (26.53)
Married/Engaged	-	2 (8.0)	2 (4.17)	-	6 (25.0)	6 (12.24)
Religion						
Muslims	15 (65.22)	12 (48.0)	27 (56.25)	3 (12.0)	6 (25.0)	9 (18.37)
Christians	8 (34.78)	13 (52.0)	21 (43.75)	22 (88.0)	18 (75.0)	40 (81.63)
Having own phone	15 (65.22)	25 (100)	40 (83.33)	3 (12.0)	23 (95.83)	26 (53.06)
Youth shares phone with: (Among youth with their own phone)			n=40	-	-	n=26
No one	12 (80.0)	18 (72.0)	30 (75.0)	-	19 (82.61)	19 (73.08)
Dating Partner	-	-	-	-	3 (13.04)	3 (11.54)
Friends	1 (6.67)	5 (20.0)	6 (15.0)	-	-	-
Siblings	2 (13.33)	1 (4.0)	3 (7.50)	3 (100)	1 (4.34)	4 (15.38)
Parents	-	1 (4.0)	1 (2.50)		-	
Other relatives					-	

Table 2. Sociodemographic characteristics of parents/caregivers participating in the study, by sex (*N* = 33).

Characteristics of the parents/caregivers (N=33)	**Male *N* (%)**	**Female *N* (%)**
Sex	14 (42.42)	19 (57.58)
Highest level of education		
No formal schooling	-	2 (10.53)
Some Primary	1 (7.14)	6 (31.58)
Primary Completed	5 (35.71)	3 (15.79)
Some Secondary	1 (7.14)	3 (15.79)
Secondary Completed	4 (28.57)	4 (21.05)
Tertiary	3 (21.43)	1 (5.26)
Marital Status		
Single	-	2 (10.53)
Engaged	1 (7.14)	-
Married	11 (78.57)	13 (68.42)
Divorced	1 (7.14)	-
Widowed	1 (7.14)	4 (21.05)
Religion		
Christians	10 (71.43)	13 (68.42)
Muslims	4 (28.57)	6 (31.58)

20-year-old, elucidated a different reaction from young participants. Here, parents' perceived reactions were far more tempered. No participants thought that John's parents would punish him, namely because John's age allowed him to make independent decisions.

"His parents will not do anything because he is 20 years old and is an adult, but if he was 15 years that would be something else." (Youth male, age 15, FGD 11).

"They will have no problem because already he is above 18 years old and they will not get surprised because he has a National Identity Card (ID) and he cannot be controlled again." (Youth male, age 16, FGD 9).

Accepting the inevitable: parents' perceptions of parent reactions upon finding SRH messages on their youth's phone

There was a sense among parents that young people accessing SRH information outside the home and from technological devices (phones or internet in general) was an inevitability.

"Children know a lot, they get [more] information than us…so when I see such a thing on the phone…obviously [they] will be learning things … if there's no understanding we educate them further. (Male Parent to a 19-year old boy, FGD 16).

I [would] need to advise him…but if you beat him, tomorrow he will open [the phone] again, because these phones have a lot of things." (Male parent to a 15-19-year old boy, FGD 7).

As such, when parents of young people were asked to put themselves in the shoes of parents who had just found ARMADILLO messages on their young person's phone, their reactions ranged from cautiously accepting to being fully supportive. Parent participants describing a supportive response were encouraged by the idea the messages would supply knowledge on a subject they would find difficult to discuss.

"So, like a good parent you are supposed to clap your hands silently and say so my child is taking care of herself and is being open minded. Don't go harsh on her, try and give her advice that it's this way and tell her this road you've taken is good, because I think these messages are explaining to you everything because as your father or mother there are things I cannot tell you, I will feel ashamed." (Female parent to a 15-19-year old adolescent girl, FGD 8).

Additionally, parent participants indicated that supportive responses might also stem from pride in seeing their youth being thoughtful in thinking about their health and their future.

"If I was Tony's parent I would be happy since I would know my son is focused on his future…I would be so proud of Tony since he has focus, even the day he will get to marry, he will be the one to take the wife to the health center for antenatal care and also for family planning." (Female parent to adolescent boy and girl, FGD 15).

Parents that shared a more lukewarm response often felt that a young person accessing messages could lead to that young person engaging in sexual activity or could be an indication that the young person was already sexually active.

"Anyway, if he was my son I won't think I'll punish him because he wanted advice first before he does the act …so I will tell him be watchful with these there are some messages that you can follow and some you can't follow." (Male Parent to a 15-19- year old boy, FGD 7).

"If I was Pauline's parent, I would call her and sit her down and tell her why she is engaging in such things, she will be ashamed to tell me, but I will tell her I already know she is already engaging in such things, I will give her advice on the good and bad part of it, it will therefore be her responsibility to either choose to continue or stop it." (Female parent to adolescent boy and girls, FGD 8).

Especially among parents who approached the messages with caution, the messages were seen as an important opportunity for a continued conversation on SRH, where parents could add their own advice to the information provided. When parent participants described the advice provided, they often corrected presumed inaccuracies or provided values-la-

den context to the information provided by the messages.

"I [will] look at those messages and ask him what happened then …I will tell him you see this message, can lead you to get pregnant or your end. You are planning your life and …when you start such things early they will spoil your life." (Male Parent to 4 adolescents boys and girls, FGD 7).

"He [the youth] wants to know about sex and protection … you tell him this message is okay, this one is not okay, it's supposed to be this way. So, it's just looking at the information and adding some information or deleting some information." (Male parent to an adolescent boy, FGD 7).

DISCUSSION

Youth participants and parent participants were presented with a scenario where a young person has accessed SRH information from a health campaign on their phone and a parent happens to see that information. In describing parent reactions, youth and parent participants were aligned in several important areas. First, both groups shared the perception that parents with supportive reactions would be happy their child was being proactive about their health and might welcome messages that could convey needed information on a sensitive subject to young people (and relieve some of that burden from parents). Both groups also saw an opportunity for parent-youth dialogue on SRH issues, which may not otherwise take place. One final similarity between both groups was the belief that parents seeing these messages on their young person's phone would take them as an indication that their child was already sexually active. This assumption was pervasive and would explain much of the youth participants' fear of negative reactions: accidental discovery of SRH information on the phone would be equated to accidental discovery that a young person had had (or was about to have) sex. The perception of negative reactions constitutes a much-feared situation for users and implementers of youth-SRH digital interventions. Youth participants could easily imagine a young (teenage) user being punished with anything from verbal castigation to being physically beaten by their upset parent; older youth (legal adults) were perceived to be immune from this. However, while parents acknowledged that there may be some who might express sharp disapproval with their young people, the only mention of physical punishment was when saying that there was no point in beating a young person (as they could and would inevitably continue to access this information). These findings demonstrate that the fear of extreme adverse reactions, should a young user's privacy be compromised, are likely overstated. However, there remain a number of areas for consideration among digital health intervention implementers in order to continue to improve the acceptability of these interventions and reduce the fear of adverse reactions. First, debunking the persistent belief that accessing SRH information (via mobile phones or otherwise) is an indicator of sexual activity is critical. This study found that parents and young people alike are responsive to the idea that digital health campaigns can 'arm' users with the knowledge to be proactive about their health. Interventions might be tailored to emphasize these forward-looking goals for future health, in addition to their reactive content for health issues arising at present. Second, digital SRH interventions should establish their own credibility within the communities in which they are deployed. Young participants emphasized the importance of messaging campaigns being viewed as a trustworthy source in the eyes of young people. Additionally, much of the parent advice-giving described above was centred around an assumption that parents would find inaccuracies between the messages and their beliefs. Meaningful community engagement around content development, as well as attention to establishing the credibility of the information source during campaign rollout, can assuage parents' concerns and reinforce credibility for a young user. Finally, digital health interventions provide the opportunity for young people to privately access validated SRH information; as such, they

should first and foremost be aimed to assure confidentiality to the primary user. However, an interesting line of future research would be to explore the potential of interventions to increase SRH communication between young people and their parents. Messaging campaigns including separate lines of content tailored for parents on how to talk about SRH with their child, how to answer questions when asked, dispelling common myths, or promoting an understanding of sexuality beyond HIV, pregnancy risks, and abstinence, might go a long way in initiating positive dialogue between parents and children.

Limitations of the study

This study has several limitations. In the youth FGDs, one vignette featured a younger adolescent female, while the second featured an older youth male. While the sex of these hypothetical young persons was never explicitly mentioned as a reason why a parent would react (positively or negatively), it is possible that it subtly influenced participants in their deliberations and resulting assertions that the younger (female) youth would be subject to negative reactions while the older youth would not. Second, it is possible that parent participants may have understated the likelihood of extremely negative reactions, either because they may not have felt comfortable expressing these views in front of the researchers; or because these were hypothetical situations and they might react differently if this scenario were to play out in real life.

CONCLUSION

Discretion and privacy are much touted qualities that make digital health interventions a seemingly-natural fit for youth looking for SRH information in a setting in which they are comfortable. This study explored a worst-case scenario for digital health interventions targeted towards youth (especially minors and those living with their parents) – a violation of this privacy by parents. Despite concerns from youth about negative reactions from parents, parents themselves indicated that extremely negative responses were unlikely. Instead, participants indicated that a discovery of these messages seemed would provide an important opportunity for dialogue (awkward or not) between parents and their children. Digital health interventions can be an important supportive tool for youth in need of accurate information. Engaging parents will also help address the communication gap between parents and their young ones on SRH matters.

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