

What Do Adolescents Say in Text Messages to Motivate Peer Networks to Access Healthcare and STI Testing: Qualitative Thematic Analysis

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Submitted to: Journal of Medical Internet Research
on: December 06, 2022

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Abstract

Background: To understand the types of messages youth believe were motivating and persuasive when asked to text friends to encourage them to seek HIV/STI testing services at a neighborhood clinic.

Objective: To understand the types of messages youth believe are motivating and persuasive when asked to text friends to encourage them to seek HIV/STI testing services at a neighborhood clinic.

Methods: We implemented an adolescent peer-based text messaging intervention to encourage clinic attendance and increase STI and HIV testing among youth (n= 100) at an adolescent clinic in San Francisco, California. Participants were asked to send a text message to five friends they believed were sexually active to encourage their friends to visit the clinic and receive STI/HIV screening. Thematic analysis was employed to analyze the content of the text messages sent and received during the clinic visit. Member checking and consensus coding was used to ensure interrater reliability and significance of themes.

Results: We identified 4 themes in the messages sent by participants: i) calls to action to encourage peers to get tested, ii) personalized messages with sender-specific information, iii) clinic information such as location and hours, and iv) self-disclosure of personal clinic experience. We found that nearly all text messages included some combination of 2 or more of these broad themes. We also found that youth were inclined to send messages they created themselves, as opposed to sending the same message to each peer, which they tailored to each individual to whom they were sent. Many (40%) received an immediate response to their message and most participants reported receiving at least one positive response, while few reported that they had received at least one negative response. There were some differences in responses by the type of message sent.

Conclusions: Given the high rates of STI and HIV and low rates of testing among adolescents, peer-driven text messaging interventions to encourage accessing care may be successful at reaching this population. This study suggests that youth are willing to text message their friends and there are clear types of messages they developed and utilized. Future research should employ these methods with a large, more diverse sample of youth and young adults for long-term evaluation of care seeking and care retention outcomes to make progress in reducing HIV/STI among adolescents and young adults.

(JMIR Preprints 06/12/2022:44861)

DOI: <https://doi.org/10.2196/preprints.44861>

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Original Manuscript

What Do Adolescents Say in Text Messages to Motivate Peer Networks to Access Healthcare and STI Testing: Qualitative Thematic Analysis

Abstract

Background: While rates of HIV and STIs are extremely high among adolescents and young adults in the US, rates of HIV/STI testing remain low. Given the ubiquity of mobile phones and the saliency of peers for youth, text messaging strategies may successfully promote HIV/STI testing among youth.

Objective: To understand the types of messages youth believe were motivating and persuasive when asked to text friends to encourage them to seek HIV/STI testing services at a neighborhood clinic.

Methods: We implemented an adolescent peer-based text messaging intervention to encourage clinic attendance and increase STI and HIV testing among youth (n= 100) at an adolescent clinic in San Francisco, California. Participants were asked to send a text message to five friends they believed were sexually active to encourage their friends to visit the clinic and receive STI/HIV screening. Thematic analysis was employed to analyze the content of the text messages sent and received during the clinic visit. Member checking and consensus coding was used to ensure interrater reliability and significance of themes.

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Conclusions: Given the high rates of STI and HIV and low rates of testing among adolescents, peer-driven text messaging interventions to encourage accessing care may be successful at reaching this population. This study suggests that youth are willing to text message their friends and there are clear types of messages they developed and utilized. Future research should employ these methods with a large, more diverse sample of youth and young adults for long-term evaluation of care seeking and care retention outcomes to make progress in reducing HIV/STI among adolescents and young adults.

Key words: Adolescents; Peer; Text Messaging; Clinics; Intervention

Introduction

Adolescents are overrepresented among those diagnosed with sexually transmitted infections (STIs). More than half of all STIs in the United States are among adolescents between 15 and 24 years of age[1]. More specifically, 15 – 24 year olds comprise 62.6% of all chlamydia infections,

and there were increases in rates of gonorrhea, syphilis, and chlamydia incidence among young men and women in this age group between 2016 – 2017[1]. However, STI testing rates among adolescents are low. Only 27.8% of sexually experienced females and 9.6% of sexually experienced males, 15 – 25 years old, report being tested for STIs in the previous 12 months. Importantly, there are gender differences in testing rates. Among those with four or more lifetime partners, 40.8% of females reported receiving an STI test in the previous 12 months, compared to only 3.1% of males[2]. Numerous barriers to STI testing have been identified including concerns about confidentiality, embarrassment, limits to access (e.g. clinic hours and payment), and low risk perception[1,2].

In 2018, adolescents between 13 and 24 years of age accounted for 21% of new HIV diagnoses in the United States and were the least likely to be virally suppressed of all groups living with HIV⁴. Among those ages 13-19 years, the highest rate of new diagnoses was among African Americans. Among those 20-24 years of age, those identifying as African American, multi-racial, and Hispanic had the first, second, and third highest new diagnosis rate, respectively. These rates are alarming, and between two and seven times the rate of new diagnoses for all adults and adolescents in the US[1]. Despite the high percentage of HIV diagnoses among teens and young adults, similar to STI testing rates, HIV testing rates are low. Among high school students who have ever had sex, the estimated proportion of having ever received an HIV test is between 13% and 22%; and only 33% of 18-24 year old's have ever tested for HIV[3]. It is estimated that only 40% of those 13 to 29-year-olds living with HIV are aware of their status[4]. Many barriers exist related to adolescents and young adults getting tested and knowing their status. Some adolescents reported low perceptions of risk, concerns about confidentiality, difficulty remembering to go and get tested, and very few cues to action for HIV testing, such as being offered a test a medical provider[5]. Profoundly apparent in these numbers, strategies that encourage adolescents and young adults to get tested for STI and HIV are desperately needed.

A model that uses peer-driven technology-based communication methods to encourage testing among youth may be effective in decreasing the barriers reported in this population. Recent data suggest that, across race and ethnicity, gender, and socioeconomic status, as many as 95% of teens in the US have access to a smartphone[6]. Text message-based interventions have shown promise in affecting positive changes in health behavior for a number of health issues, including diabetes, weight loss, medication adherence, and smoking cessation[7]. With widespread phone access among American adolescents, and with the average youth sending more than 30 messages a day, mobile phone-based health interventions offer an opportunity to reach many adolescents and young adults to improve health outcomes[8]. Importantly, youth have responded positively to receiving text messages as a part of health promotion activities. Youth (16 – 20 years old) who identified as African American and heterosexual expressed openness to receiving HIV prevention and sexual health messages by text and expressed a desire for a text intervention to include the opportunity to build community and share information with each other[9]. A study of 15 to 20-year-old adolescents described text messaging as convenient for health promotion because they are “always on their phones”[10] and a text-based peer education intervention in which youth could text sexual health questions to a peer health educator was found to be feasible and acceptable[8]. However, in each of these interventions, text messages were sent by clinic or research staff and the messages themselves were standardized.

Peer strategies are based on the premise that members of a social network know and trust each

other and often share similar health behaviors[11]. Building on the widespread usage of text messaging and the important role of peer influence, we implemented a peer-delivered texting intervention to increase attendance at a youth health clinic in San Francisco. This word-of-mouth communication strategy[12] is a practical application of Diffusion Theory[13]. Studies indicate this communication strategy is highly persuasive[14]. The implementation of the peer-based text messaging strategy showed promise for both increasing the number of youths accessing health services and finding youths engaging in sexual risk behaviors and most in need of sexual health screening and services.[15] The present study will examine the text messages that adolescents and young adults sent in order to explicate the types of messages they believed would be persuasive among their friends. Understanding what young people find as motivating and persuasive can inform other peer-based models of influence and intervention.

Methods

Study Design

We enlisted The We analyzed the content of messages sent and received during the initial clinic visit. The study was approved by the Institutional Review Board at the University of California, San Francisco (Approval number # 12-08516)

Study Population

Participants were recruited from an adolescent medicine clinic in San Francisco, California that served youth 12-24 years of age. We approached consecutive adolescent clinic patients to send text messages to five peers they believed were sexually active and lived in the clinic's service area. Our target was 100 participants to ascertain feasibility and acceptability of the intervention. Of the 153 patients approached by research staff, 28 (18%) refused, 25 (16%) did not have a phone with them, and 100 (65%) provided informed consent and sent text messages to at least five peers.

Participants were told that the goal of their messages was to encourage their friends to visit the clinic and receive STI screening. Participants developed their own messages and was provided a text messaging guide that reviewed considerations for developing messages (eg, let your friend know you care about them, example messages). The text message and any response from friends while the participant was still in the clinic were recorded by research staff.

Data Analysis

We analyzed text messages using thematic analysis, as described by Braun and Clarke[16,17]. The second author conducted the initial analysis, including reading all text messages, generating initial codes, and identifying emergent themes. After completing the initial analysis, the first author reviewed the codes and initial themes. Together, the first and second author discussed the initial analysis, merged related themes, identified the most salient themes, and eliminated those that lacked enough supporting data. Decision trails were maintained throughout the coding and analysis process.

Ethics Approval

The study was approved by the University of California, San Francisco, Institutional Review Board (approval #12-08516).

Results

Participants

A total of 430 new patients were seen at the clinic during data collection, of whom 338 (79%) were female. New patients were 61% African American, 17% Hispanic, had a mean age of 19.6 years (SD=2.6, range 13-25) and primarily identified as heterosexual (87%). The demographics of participants sending messages mirrored those of the overall clinic.

All participants sent five messages with 18% sending more than the required five. In the brief post-texting interview, most participants reported no concerns with sending the text message (55%), 18% expressed worry about their friends' response, and 27% expressed concern that their friend would not heed their advice (e.g., friend would not call the clinic, friend would not listen). In the one-week post-messaging interview, no youth reported adverse events or negative outcomes from sending the message. Table 1 includes full examples of text messages.

Thematic Findings

We identified four overarching themes that emerged from participants' text messages. Nearly all text messages (94%) included some combination of 2 or more of these themes. The four themes were: (1) calls to action; (2) personalized messages; (3) clinic information; and (4) self-disclosure of services received at the clinic and/or positive experiences and perceptions about the clinic services and staff.

Calls to Action

The most common characteristic of text messages (87% of all messages) were calls to action (CTA) that were intended to encourage friends to get tested and know their status, or to get some other service (e.g. birth control, a mom's group, or job services). Some CTA were more direct than others. For example, some texts directly called for their friend to come to the clinic to receive a service (e.g. "...you should check it out and get tested for stds..." (ppt 40). Others were less direct which we coined passive CTA and included messages that were more general about the importance of staying on top of one's health (e.g. "Its a good idea to come to 3rd st youth clinic and get checked out" (ppt 70).

Personalized Messages

Although clinic staff provided participants with a text message guide including pre-written text messages, most texts (81%) were written by participants. Most of these messages simply informed the recipient of general clinic information and encouraged clinic attendance, while a small number of these messages (n=10) were more personal in nature. For example, some referred to something specific about themselves in the message (e.g. "...remember I was a health educator..." ~Ppt 102), or referenced something specific to the text recipient ("wen u cum bck frm Texas, [I'm] here at the clinic on 3rd, u shuld stp bi" ~Ppt 5). Others started with "hey. This is [name]".

Clinic Information

More than two-thirds (69%) of text messages included clinic-specific information. Some included basic information about the clinic such as address or other location marker (e.g. "...It's near the new wing stop on 3rd..." ppt 58), phone number, or hours of operation. Others included specific information about services offered at the clinic (e.g. ..." They offer free std testing..." ppt 78).

Self-Disclosure and Positive Clinic Experiences

In more than half (55%) of text messages adolescents disclosed something about their own clinic participation (31%), and/or positive experiences about the clinic (24%). These included general statements about having been to the clinic such as, "...theres a good clinic ive been going for years..." (ppt 48). Others, included more specific information on why they attended the clinic, "...I went and got tested. And I know my status..." (ppt 26). In addition, to disclosing their own clinic attendance, some participants included positive information about their own experience at the clinic (e.g. "I just got checked out at the 3rd st clinic and they were really nice.." (ppt 41). Others did not disclose anything about their personal experience, but shared positive perceptions of the clinic: "...they will not tell your business to no one so go check them out..." (ppt 103). Within this theme, 42% included both self-disclosure and positive experiences, while most (58%) disclosed their clinic attendance only, or did not disclose receiving any services but shared positive perceptions about the clinic.

Responses Received from Peers

A total of 40 (40%) participants reported that they received responses from the friends they texted. Among those reporting that they received a response, most (58%) reported receiving at least one positive response, while few (10%) reported that they had received at least one negative response. There were some differences in responses by the type of message sent. Of those using personalized messages, 32% received any response, and of those responses, 61% were positive. Approximately a quarter (n=15, 14%) used the staff provided text messages as is without making changes. Of those, 53% received some type of response, and 38% of those responses were positive. While a greater proportion of the staff provided text messages received a response compared to the personalized messages, a smaller proportion of them were positive responses. Similarly, of those text messages that used direct calls to action, 32% received any response, with 71% of those being positive. Of those using passive calls to action, 41% received a response, but only 41% of those were positive responses.

Discussion

Principal Results

The overarching purpose of this study was to examine what youth view as motivating and persuasive when participating in peer-driven text messaging approach to promoting sexual health services access. Consistent with the word-of-mouth communication strategy,[12] we found that youth viewed tailoring the content as a facilitator of a response from their intended recipient, as they chose not to use the few predesigned example messages found in the provided guidance. Tailoring messages is a health communication best practice previously used in SMS-based counseling interventions with youth[18–20]. Over 40% of participants reported that their peers replied to their message. There were few negative text responses and no negative consequences or adverse events reported by participants in follow-up interviews. This suggests that the messages sent by participants may also be acceptable to the recipients of the message.

We categorized the content of the messages into four themes and note that most messages used at least two themes: (1) calls to action; (2) personalized messages; (3) clinic information; and (4) self-disclosure of services received and/or positive clinic experiences and perceptions. Calls to action, where youth encouraged their peers to access HIV/STI testing and other health services were highly prevalent in the messages that participants crafted. Peer influence has been widely studied in a number of maladaptive behaviors[21]; however, direct peer endorsement of services has been demonstrated to promote health-seeking behaviors of a

wide variety including HIV prevention[22,23], physical activity[24], and most recently, COVID-19 vaccination uptake. Future research should explore the use of peer-designed and peer-delivered text interventions to promote different health-seeking behaviors related to sexual health, including online information seeking and engagement of others in decision-making related to sexual behaviors.

Personalized messages included informing peers about clinic information as well as whether the individual sending the message had accessed the clinic. More than two-thirds of messaging also included specific information about the clinic (e.g. location, hours of operation and services). Informing peers about available services, hours of operation, and location suggests that peers viewed this information as important for facilitating access. This may be because it facilitated transportation seeking, on which many youth would be dependent[25,26].

Finally, self-disclosure about visiting the clinic and reporting positive experiences may also serve to encourage clinic attendance through reporting patient satisfaction[27]. Self-disclosure may also serve to normalize and destigmatize sexual health services use, which has important implications for future research since stigma is a major barrier to sexual health services use among adolescents and young adults[28,29]. Given that youth often share many similarities to their peers, future research should evaluate the impact of self-report of positive care experiences on healthcare access and healthcare stigma experiences among youth.

Limitations

Several limitations existing with our study findings. While we did record the immediate response from message recipients, we were unable to examine if all recipients read the messages or to directly ask recipients their reactions. Our study was also conducted within the initial phase of a text message intervention deployed in an adolescent medicine clinic serving youth 12-24 years old. Therefore, we cannot ascertain the direct relationship between messages and actual testing rates, HIV/STI diagnoses rates within our study's analyses. Further, the patient population included in our study and the larger intervention are likely insured with some existing access to care, and may not represent youth and young adults experiencing profound marginalization and greatest HIV/STI inequities. Lastly, our findings are supported by existing literature, but may not be generalizable to all youth, youth in the region where the research was conducted, or the youth included in the larger study.

Conclusions

Disproportionately high STI and HIV incidence among adolescents and young adults underscores need for identifying approaches to interrupt the spread of STIs and HIV and prevent new infections, particularly among minority youth. Adolescents rely on text messaging as a primary method of communication, which has implications for leveraging peer influence for health promotion especially among youth of color who experience the highest HIV/STI incidence. Future interventions should incorporate guidance for youth as they craft messages for sharing with peers. Self-disclosure of care seeking was a common method employed by youth, which may be a powerful approach for destigmatizing HIV/STI testing and should be expanded on in future research and trainings with youth as they craft messages. Use of low-cost, easily accessible peer-driven text-based interventions to promote sexual health care services utilization among adolescents and young adults has great potential for reducing inequities and improving health outcomes.

Acknowledgments

The authors would like to thank the youth who participated in this study and the staff at the 3rd Street Youth Center and Clinic. This work was supported by the National Institute of Drug Abuse 1R34DA031806-01A1) to the first author. The National Institute on Drug Abuse had no role in the design of the study; in the collection, analysis, and interpretation of the data; or in writing the manuscript.

Data Availability

Data is available from the first author by request.

Authors Contributions

ML obtained funding for and supervised the study. ML and JJ conceptualized, designed and implemented the study. ML and CC analyzed and interpreted the data. ML and CC prepared the manuscript and were major contributors in writing the manuscript. AMB and KT were major contributors in reviewing, and editing the manuscript. All authors read and approved the final manuscript.

Conflicts of Interest

None declared.

Abbreviations

STI: Sexually Transmitted Infection

HIV: Human immunodeficiency virus

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Supplementary Files

Multimedia Appendixes

Untitled.

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