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Brief Behavioral Intervention to Improve Adolescent Sexual Health:

A Feasibility Study in the Emergency Department

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Abstract

Objective: Although emergency department (ED) visits offer an opportunity to deliver brief behavioral interventions to improve health, provision of ED-based interventions targeting adolescent sexual health is uncommon. The objectives for this study were to evaluate the feasibility and preliminary effects of a novel sexual health service intervention for adolescents.

Methods: In this cross-sectional feasibility study, sexually active patients aged 14 to 19 years presenting to a Midwestern pediatric ED were recruited to receive an intervention to improve sexual health. The intervention, based on motivational interviewing (MI), included agenda setting, exploration of behaviors, a decisional balance exercise, tailored feedback, and provision of personalized health services (including condoms, prescription for emergency contraception, urine testing for *Chlamydia trachomatis* and *Neisseria gonorrheae,* and referral to the hospital-affiliated adolescent clinic). Data were collected before and after intervention administration and at a 3-month follow-up telephone interview. Surveys assessed sexual risk behaviors, satisfaction with the intervention, health care use, and demographics. Feasibility criteria were (1) subject-rated interventionist fidelity to MI principles (Likert scale 1 [strongly agree] to 4 [strongly disagree]), (2) subject satisfaction (Likert scale 1 [not at all] to 5 [very]), and (3) session duration (minutes, recorded by the interventionist). A secondary outcome was the proportion of subjects who completed at least 1 health service. Services provided at the adolescent clinic were determined by an electronic medical record review. Comparisons of responses between sex subgroups were analyzed using X^2 test.

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Results: From August to November 2012, 69 adolescents were approached, 66 (96%) completed the screening survey, and 24 (37%) reported previous sexual activity. Of those, 20 (83%) agreed to participate. The mean (SD) age was 16.2 (1.4) years; 60% were female. Most (78%) reported that the interventionist maintained high fidelity to MI principles and most (80%) were very satisfied with the intervention. Mean (SD) intervention length was 15.7 (2.2) minutes. Most subjects (65%) accepted 1 or more health services, including 42% who completed clinic follow-up. In the ED or the referral clinic, the following services were provided to the subjects: condoms (n = 11), emergency contraception prescription (n = 5), *C. trachomatis/N. gonorrheae* testing (n = 4), hormonal birth control provision (n = 2), and human immunodeficiency virus testing (n = 3). Fifteen subjects (75%) were reached for the 3-month follow-up, and condom use was maintained by 67% of those reporting sexual activity.

Conclusions: This study demonstrated the feasibility and potential utility of an MI-based service navigation intervention to connect youth with point-of-care services as well as resources for ongoing sexual health needs.

Keywords

adolescent; reproductive health; motivational interviewing; health behavior

Many adolescents seek health care in emergency departments (EDs) rather than in primary care settings.[1] They frequently report high-risk sexual behaviors and sexual health care needs that are not addressed during the typical ED visit.[2,3] These visits represent important opportunities to provide sexual health care and encourage healthy behaviors via a brief behavioral intervention. However, few proven interventions are available in the ED to motivate youth to practice safer sexual behavior.

Motivational interviewing (MI) is a method to facilitate health behavior change. This collaborative, goal-oriented style of communication is designed to strengthen personal motivation for and commitment to a specific goal by eliciting and exploring a patient's own personal reasons for change.[4] Motivational interviewing has strong empirical support and has been used with adolescents to facilitate changes in smoking, diet, violence, and substance abuse.[5,6] However, no reports on MI-based sexual health interventions for the ED have been published.

The goals of this study were to examine the feasibility of a novel ED-based health service intervention designed for adolescents in the pediatric ED and to describe health service uptake among participants.

METHODS

Study Design

We conducted a single site, open pilot trial of a newly designed intervention. The study procedures (including parental wavier of consent) were approved by the hospital institutional review board.

Study Setting and Population

This study was conducted at a Midwestern children's hospital with 69,000 annual ED visits (7500 aged 14-19 years). Patients are primarily non-white (68%) with public or no insurance (71%).

Patients aged 14 to 19 years reporting previous sexual activity were eligible. Patients who were critically ill, were seeking care because of sexual assault, had cognitive impairment, or did not speak English were excluded. Recruitment was based on interventionist availability (usually 3:00 to 11:00 PM). Clinical care was not interrupted by recruitment or the intervention.

Intervention

We selected the theory of planned behavior as the guiding framework and MI for the counseling style because of their particular relevance to adolescent health.[6–8] We created an intervention manual that contained general MI guidelines and instructions for intervention-specific elements. The intervention included rapport building, agenda setting by the participant, exploration of risk behaviors, a decisional balance exercise for the potential benefit of increasing safer sex behaviors, and personalized feedback. Sessions were individually tailored, and health services (ie, provision of condoms, prescription for emergency contraception, urine testing for *Chlamydia trachomatis* [CT] and *Neisseria gonorrheae* [GC]) were offered as appropriate. Referral to the hospital-associated Title X Adolescent Clinic was offered to all participants. The interventionist was a female graduate student in clinical health psychology with training in health behavior change counseling techniques including MI. She received 50 hours of additional training in MI that included role playing and direct observation as well as training on adolescent sexual health and the study protocol. Study authors T.A. and K.G., members of the Motivational Interviewing Network of Trainers, provided MI training and supervision.

Study Protocol and Data Collection

Participants completed a preintervention assessment (time 1) followed by the intervention and an immediate postintervention assessment (time 2) in a private ED treatment room. A 3-month follow-up assessment (time 3) was administered via telephone. We used measures from national surveys to collect data on sexual risk behaviors and health care use.[9] We determined receipt of health services via electronic medical record or self-report (for services outside the hospital system). Additional questions for time 1 included demographics and chief complaint and, for time 2, intervention topics discussed, satisfaction with the intervention, and intervention fidelity measures. The intervention duration (in minutes) and health service uptake were recorded by the interventionist.

Data Analysis

The primary outcome measure was feasibility, defined as fidelity to MI principles, efficiency, and satisfaction. Subjects rated the interventionist's fidelity to MI principles using a Likert scale (1 [strongly agree] to 4 [strongly disagree]). Efficiency was determined by length (in minutes) to conduct the session. Satisfaction was determined by subject response to the question, “How satisfied overall were you with this session?” (Likert scale 1 [not at

all] to 5 [very]). We determined the proportion of subjects who completed at least 1 health service (ie, acceptance of condoms or emergency contraception prescription, CT/GC testing, attendance at an adolescent clinic visit within 2 weeks of enrollment). Demographic characteristics were summarized by standard descriptive means. Chief complaint was dichotomized as nonreproductive or potentially reproductive (genital-urinary complaints, abdominal pain, and vomiting or pregnancy concern for female subjects only). Comparisons of responses between sex subgroups were analyzed using X^2 test; the pilot was too small for an analysis by other characteristics. Data analyses were conducted using SPSS for Windows version 19 (SPSS Inc, Chicago, IL).

RESULTS

Subjects

Subjects were enrolled from August to November 2012. Among 69 adolescents approached, 66 (96%) completed the screening survey; 24 (37%) reported previous sexual activity. Of those, 20 (83%) agreed to participate, including 2 female subjects who reported bisexual activity. Mean (SD) age was 16.2 (1.4) years; 60% were female; 95% had public or no insurance; 60% were black, and 30% were white. Most ED visits (80%) were for nonreproductive reasons. Nearly half of the participants (45%) lacked a health check-up within the past 12 months. Six subjects reported no condom at last sexual intercourse; female subjects were more likely than male subjects to report this (50% vs 0%, $P = 0.017$).

Fidelity

Most subjects somewhat or strongly agreed that the interventionist (1) “was easy to talk to” (90%), (2) “was concerned about me” (78%), (3) “understood me” (89%), (4) “treated me like an equal” (89%), and (5) “did not push me into something I wasn't ready for” (80%), demonstrating good fidelity to the core MI principles. Mean (SD) session length was 15.7 (2.2) minutes (range, 11–20). All subjects reported being fairly (20%) or very (80%) satisfied with the intervention. Subjects reported that core topics (attitudes, goals, safer sex, pregnancy prevention, importance of regular care) were discussed 90% to 95% of the time.

Health Services

Thirteen subjects (including 67% of those reporting no condom at last sex) completed 1 or more ED-based health services (Table 1 describes services provided). All subjects were offered appointments at the adolescent clinic; 12 accepted, and 5 (42% of acceptors) kept their appointments. Among those completing ED-based CT/GC testing, 1 male subject was positive for chlamydia infection and treated at the adolescent clinic. Compared with the female subjects, the male subjects were more likely to complete ED-based CT/GC testing (37% vs 0%, $P = 0.021$) and accept emergency contraception (100% vs 0%, $P = 0.008$). Although not statistically significant, compared with the female subjects, the male subjects were more likely to complete 1 or more health service (75% vs 58%, $P = 0.4$) and less likely to accept a follow-up appointment (38% vs 75%, $P = 0.09$). Fifteen subjects (75%) were reached for the 3-month follow-up. Six reported sexual intercourse since the intervention, and 4 (75%) reported condom use at their last sexual experience.

DISCUSSION

This study demonstrated the feasibility of a novel intervention for sexually active adolescent ED patients as established by fidelity to MI principles, efficiency, and patient satisfaction. A large majority of eligible patients agreed to participate, highlighting the acceptability of this type of intervention to adolescent ED patients. A significant proportion of subjects (65%) accepted 1 or more health services as part of the intervention. Importantly, by completion of the 3-month follow-up, *cumulative* receipt of health services included CT/GC testing (30%), human immunodeficiency virus (HIV) testing (15%), health visit to obtain/discuss contraception (30%, with 2 subjects having documented receipt of hormonal birth control), and vaccination (20%). Notably, many adolescents received specific services (ie, vaccination and HIV testing) that were not the direct focus of the intervention but may have been affected by the discussion of core topics, specifically safer sex and the importance of regular care.

We found sex differences in the uptake of specific health services with male subjects more likely to complete CT/GC testing and accept an emergency contraception prescription. Similar to a study by VanDevanter et al,[10] males were less likely to accept clinic referral. These results may have important implications for behavioral intervention design, and more research is needed to explore mediators and moderators of intervention effects.

Because MI uses a client-centered, directive method for enhancing intrinsic motivation to change, it is well suited to address adolescent-specific challenges such as the need for self-determination and emerging autonomy.[4] Although rare MI-based interventions targeting substance abuse and violence have been used successfully with adolescents in the ED, no well-controlled MI-based studies targeting sexual behaviors have been conducted in this setting.[6,11] The novel population, health topic, and study setting have promising implications for further development and use of MI-based brief interventions in the ED.

Limitations

Although this pilot study had a small sample size and lacked a control group, the literature demonstrates that similar sample sizes and design have been used for initial feasibility studies of brief interventions. Because of the pilot nature of the study, we used subjective measures to determine fidelity to MI principles; future work will include audiorecording and coding to monitor intervention fidelity. Responses about adolescent sexual history were provided by self-report, which could be influenced by social desirability effects or concerns about confidentiality.

CONCLUSIONS

This work demonstrates the successful development and implementation of a brief MI-based sexual health service intervention, with potential to reach high-risk youth and improve adolescent health through provision of behavioral counseling, sexual health services, and linkage to comprehensive care. A larger clinical trial to assess the efficacy of the intervention on health service uptake and to evaluate for potential moderators seems warranted.

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TABLE 1.

Health Services Provided During ED intervention, Adolescent Clinic Referral, and by 3-Month Follow-up

	No. Subjects
ED-based services*	
CT/GC testing	3
Provision of condoms	10
Prescription for emergency contraception	5
Accepted referral to the adolescent clinic	12†
Adolescent clinic referral services Chlamydia treatment (identified from ED intervention)	1
CT/GC testing	1
HIV testing	2
Hormonal birth control (transdermal birth control and depo-provera)	2
Provision of condoms	1
Vaccination against influenza	1
Additional services at 3 mo‡	
CT/GC testing	2
HIV testing	1
Health care visit to discuss or obtain birth control	4
Vaccination against human papillomavirus	1
Vaccination against influenza	2

*GC/CT testing was offered to 9 subjects, condoms to 17 subjects, emergency contraception to 7 subjects, and clinic referral to 20 subjects.

†Five (25%) completed referral.

‡Data obtained via electronic medical record and self-report (for services outside the institution).