Journal of Adolescent Health 56 (2015) 267–273

ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Original article

Integrating Mental Health Into Adolescent Annual Visits: Impact of Previsit Comprehensive Screening on Within-Visit Processes

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Article history: Received July 31, 2014; Accepted November 10, 2014
Keywords: Adolescent; Previsit computerized screening; Patient–doctor interactions; Mental health screening

A B S T R A C T

Purpose: To evaluate how a comprehensive, computerized, self-administered adolescent screener, the *DartScreen*, affects within-visit patient–doctor interactions such as data gathering, advice giving, counseling, and discussion of mental health issues.
Methods: Patient–doctor interaction was compared between visits without screening and those with the DartScreen completed before the visit. Teens, aged 15–19 years scheduled for an annual visit, were recruited at one urban and one rural pediatric primary care clinic. The doctor acted as his/her own control, first using his/her usual routine for five to six adolescent annual visits. Then, the DartScreen was introduced for five visits where at the beginning of the visit, the doctor received a summary report of the screening results. All visits were audio recorded and analyzed using the Roter interaction analysis system. Doctor and teen dialogue and topics discussed were compared between the two groups.
Results: Seven midcareer doctors and 72 adolescents participated; 37 visits without DartScreen and 35 with DartScreen were audio recorded. The Roter interaction analysis system defined medically related data gathering (mean, 36.8 vs. 32.7 statements; $p = .03$) and counseling (mean, 36.8 vs. 32.7 statements; $p = .01$) decreased with DartScreen; however, doctor responsiveness and engagement improved with DartScreen (mean, 4.8 vs. 5.1 statements; $p = .00$). Teens completing the DartScreen offered more psychosocial information (mean, 18.5 vs. 10.6 statements; $p = .01$), and mental health was discussed more after the DartScreen (mean, 93.7 vs. 43.5 statements; $p = .03$). Discussion of somatic and substance abuse topics did not change. Doctors reported that screening improved visit organization and efficiency.
Conclusions: Use of the screener increased discussion of mental health but not at the expense of other adolescent health topics.

IMPLICATIONS AND CONTRIBUTION

Use of a comprehensive computerized screener before annual visits may increase teen disclosure and doctor–patient discussion of mental health problems, and therefore, aid in the recognition and discussion of mental health issues in primary care settings. Further research is needed to determine whether these effects lead to effective intervention.

Adolescent preventive care presents the primary care provider (PCP) with a broad psychosocial and somatic agenda [1] that challenges the PCP to efficiently balance attention to physical and mental health [2]. Several studies have documented the lack of screening and counseling of adolescents during annual

Conflicts of Interest: Authors do not have any potential, perceived, or real conflicts of interest to disclose.

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1054-139X/
http://dx.doi.org/10.1016/j.jadohealth.2014.11.011

visits, particularly for sensitive topics such as depression, reproductive health, and/or weight [2–7]. Although asking open-ended questions can lead to greater coverage of recommended annual visit topics [8], use of previsit screening is a potential solution to managing the broad agenda of addressing several adolescent risk behaviors. Previsit screening allows the PCP to review a summary of concerns, issues, and pertinent positives at the beginning of the visit, and thus, potentially facilitates a shift from the PCP asking questions during the visit to discussion and counseling about relevant adolescent health issues including mental health. This shift could be a mechanism for how previsit screening can increase PCP patient centeredness [9].

Although research on previsit computerized screening is relatively new, there is emerging evidence that both patients and PCPs respond positively. PCPs have reported screening to be both acceptable and useful, and they perceive parents and patients to be more satisfied than dissatisfied with screening [10–12]. Computerized screening is advantageous for taking less time and eliminating the need for paper and hand scoring of results [10,11]. It is a feasible way of increasing identification of pediatric mental health concerns [10,13–16]. Adolescents in particular appear to be more comfortable reporting personal information to a computer than to a person [14,17–20]. More adolescents thought their visits were confidential, felt they were listened to carefully (84% vs. 65%), and were more satisfied (88% vs. 63%) when computerized screening was used compared with when it was not [21].

There is little information, however, about how screening affects within-visit patient–doctor processes such as engagement, data gathering, counseling, advice, and discussion of sensitive issues. The fact that adolescents are more likely to disclose their concerns on a computerized screener suggests that the use of the screener may help validate adolescents' concerns, help them feel comfortable raising sensitive issues, and help them realize that their doctor is interested in discussing these. Improvement in these areas could help the PCP understand the teen's concerns, engage them in plans to address their concerns, and adherence to the treatment plan.

Our work with younger patients, aged 4–11 years, showed that comprehensive previsit screening completed by parents facilitated agenda setting, enhanced engagement, and promoted discussion of mental health issues during well-child visits [16]. Screening was well accepted by both parents and PCPs. However, it is unknown whether these benefits will generalize to the adolescents who present a broader agenda.

The overall goal of this study was to better understand how PCPs use a comprehensive previsit, Web-based screen during annual visits with adolescents and to assess the impact of screening on the within-visit processes of problem assessment, patient engagement, and PCP counseling. Using audio-recorded observations of annual visits, we examined the dialogue between pediatricians and adolescent patients and the content of information exchanged without and with use of a previsit screener. We hypothesized that the screener would shift the communication focus from data gathering to counseling the teen and increase discussion of sensitive issues, including mental health.

Methods

Study design

This was a quasi-experimental study to observe how pediatric PCPs and adolescents use previsit comprehensive screeners during annual visits. We compared two study groups in which the doctor acted as his/her own control. To avoid contamination, 37 usual care visits (seven PCPs with five to six patient visits) were recorded before introducing DartScreen. Participating PCPs used his/her usual routine for annual visits, which did not include a previsit screener or other formal screening tools. This was followed by recording 35 annual visits (the same seven PCPs) with adolescents who completed the DartScreen before the visit.

Setting

Two pediatric primary care sites (one urban and one rural) were included. Bassett Pediatric clinic is a general pediatric practice in a rural health network in Upstate New York. The East Baltimore Medical Center houses a pediatric clinic in the Johns Hopkins Community Physicians urban network in Baltimore, MD. Adolescents aged 15–19 years who were being seen by a doctor for an annual visit were eligible for recruitment.

Intervention

The tablet-based screener, DartScreen was based on the GAPS model [22] and was modified on the basis of recommendations from the Clinicians Enhancing Child Health network [14]. Two unique computerized, self-administered screeners had been developed by two coauthors (A.L.O. and Z.J.N.), one for 11- to 14-year-olds and one for 15- to 19-year-olds. Older teens were selected for this study as they are more likely to have a positive screen. Each screener has 60–65 core questions which can branch up to 94 total questions. Nine adolescent health domains were the focus of this study: nutrition, exercise, school, safety, reproductive health, drugs, alcohol, tobacco, and psychosocial (depression, anxiety, and mental health). Mental health screeners incorporated into the DartScreen [23] include Patient Health Questionnaire (PHQ) [24,25], General Anxiety Disorder [26], and Suicide Behaviors Questionnaire [27]. Branching logic allows additional questions to be asked if risk was present and to assess it more in-depth. Examples include screens for depression, that is, if the PHQ-2 screen was positive, the screener branched to the PHQ-9. If the two NIAAA (National Institute on Alcohol Abuse and Alcoholism) screening questions for alcohol use by friends or the teen were positive, the screener branched to the six-question CRAFFT[1] screen for alcohol and other drug-related problems [28].

For visits with the DartScreen, the teen was asked to complete the screener using an *iPad* in the examination room before the annual visit started. Teens were instructed to complete the screen on their own. At the beginning of the visit, the PCP was given the iPad displaying a summary of DartScreen results including color-highlighted pertinent negative and positive responses to each screening question.

Teens (and parents if teens were less than the age of 18 years) were recruited consecutively and consented for study by research assistants. The participation rate was 87% (72/83), with 11 teens refusing because they had sensitive issues to discuss or did not want to participate in a study. On the basis of prior studies, a sample size of 34 per group was sufficient to detect a difference of 24% in one or more Roter interaction analysis

[1] CRAFFT is a mnemonic acronym of first letters of key words in the six screening questions (CAR, RELAX, ALONE, FORGET, FRIENDS, and TROUBLE) for adolescents aged 14 years or more.