Investigating the Association between Patient Gender and Rate of Provider Discussion of Health-Risk Behaviors and Mental Health Concerns in Adolescents

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Abstract

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Adolescence is an important time for screening, discussion, and prevention of important health issues including substance use, sexual health, and mental health. Addressing these issues early can improve adolescent health outcomes and decrease rates of related chronic health complications in adulthood. Many factors have been shown to have differing effects on the prevalence of health risk behaviors in adolescents and their rate of receiving counseling for these health topics. The purpose of this study was to determine the association between patient gender and rate of clinician discussion of health issues including substance use, sexual health, and mental health during adolescent well-child visits. Adolescents (N=440), ranging from 13-18 years old, recruited across 10 pediatric clinics in Seattle and rural areas of Washington, completed a web-based screening on areas including substance use, sexual activity, and depression and anxiety prior to their well-child visits to assess baseline activity and risk. After the visit, they completed a 1-day follow up survey to assess for discussion of the same topics by their clinicians. We utilized Stata software and Fisher's exact test to evaluate for gender differences in the rate of activity, rate of discussion among all youth, and rate of discussion among youth who engaged in behaviors. Statistical significance was defined as $\alpha < 0.05$.

Prevalence rates were similar for males and females with the exception of depression and/or anxiety where females reported a higher prevalence than males ($p=0.003$). Among all adolescents, discussion rates were similar for males and females for all topics. However, among adolescents who endorsed behaviors, sexually active males (100%, n=10/10) were more likely than females (50%, n=4/8) to receive discussion for sexual health ($p=0.02$). In addition, while the majority of adolescents received private time with their clinicians, fewer adolescents received discussion of specific health risk topics, highlighting the need to improve frequency and quality of private time and confidential healthcare delivery to adolescents.

INTRODUCTION

Confidential Care in Adolescent Health

Adolescence is a time of significant morbidity and an important period for screening and counseling of health issues including substance use, sexual health, and mental health (Lerand, 2007, and Kadivar et al., 2013). The majority of morbidity and mortality during adolescence is preventable (Ozer et al., 2011). However, when left unaddressed, these behaviors can later contribute to or exacerbate chronic health conditions in adulthood (Kadivar et al., 2013).

Approximately up to 70% of adolescents have a preventative health visit every four years (Nordin et al., 2010) while most adolescents see a clinician, for preventative or acute visit, at least annually (Ozer et al., 2011). While evidence in adolescents is limited, previous studies in adults have shown that counseling by clinicians reduces alcohol consumption and increases safe drinking behavior (Kaner et al., 2018). It also increases tobacco quit-rates in adults. In adolescents, education and provisions for contraceptives lower the rate of unintended pregnancy among adolescent females ranging from age 15-17 years of age. The U.S. Preventative Services Task Force (USPSTF) recommends screening adolescents 12-18 years of age for depression. If recognized, treatment with appropriate medication, psychotherapy, or both can improve the quality of life of adolescents with depression. This evidence suggests that preventative health services can improve health outcomes of adolescents and reduce risky behaviors and long-term health complications (Ham & Allen, 2012; Ozer et al., 2011; Grilo et al., 2018).

As adolescents mature, they also show increasing autonomy, independence, and cognitive ability to make health care decisions (Lerand, 2007). Private time with a clinician and confidentiality in the healthcare setting is a natural extension of the adolescent's developmental trajectory. Confidential healthcare means that an agreement exists to protect information shared between a patient and a provider, unless explicit permission is given to disclose the information

or a breach of confidence is warranted in the setting of patient safety (Lerand, 2007). This component of the adolescent health visit helps facilitate discussion of sensitive topics (i.e. substance use, sexual health, and mental health) and deliver preventative health services to adolescents (Grilo et al., 2018). It also supports the adolescents' emerging autonomy and facilitates the development of skills to manage health independently (Lerand, 2007).

Parent Perspectives on Confidential Care

Both adolescents and their parents want clinicians to raise discussion about sensitive issues during adolescent health visits (Ham & Allen, 2012). The majority of parents acknowledge their child's developing maturity and believe that private time with the clinician would help their child discuss sensitive issues and take responsibility for his or her health (Duncan, Vandeleur, Derks, & Sawyer, 2011).

However, parents hold conflicting views about confidentiality (Duncan et al., 2011). Although parents support private time, they have the simultaneous wish to be informed about their child's substance use, sexual activity, and mental health issues. Among parents, 37%-87% desired knowledge of drug and alcohol use, 40-59% desired knowledge of sexual activity and related health issues, and 87% believed they should be informed of depression or other mental health issues (Duncan et al., 2011). Parent's conflicting views of confidential care and misperceptions of clinicians' disclosure responsitiblities may decrease an adolescent's willingness to disclose and discuss high risk behaviors during private time.

Adolescent Perspectives on Confidential Care

Lack of confidential care for adolescents can limit opportunities for screening and counseling of important health issues such as substance use, sexual health, and mental health. When confidentiality is not assured, adolescents are less willing to discuss sensitive topics with

their clinicians, are more likely to deny past participation in risky health behaviors, or may even skip care altogether (Grilo et al., 2018; Kadivar et al., 2013). This finding is particularly true among adolescents who endorse risky behaviors or psychological distress, and can lead to negative consequences in youth who are most vulnerable (Grilo et al., 2018; Kadivar et al., 2013; Lerand, 2007).

On the other hand, adolescents view doctors as an important source of health information and report they are more likely to follow risk reduction recommendations if their autonomy and confidentiality were respected (Kadivar et al., 2013). When provided with private time and confidential care, adolescents expressed attitudes that are more positive about clinicians and were more willing to discuss sensitive topics. They also feel anticipatory guidance should start at a younger age (Grilo et al., 2018).

Current Guidelines

Confidential services for adolescents have been supported by several major medical organizations, dating back to the 1960's (Haggarty, 1968). Medical organizations including the Society for Adolescent Health and Medicine, the American Academy of Pediatrics, the American Academy of Family Physicians, and the American Medical Association also recommend that clinicians initiate health risk assessments and counseling for adolescents (Kadivar et al., 2013). Guidelines also recommend that clinicians offer anticipatory guidance prior to adolescents' engagement in risky behaviors and that clinicians should educate adolescents and their families about the limitations and protections of confidentiality (Duncan et al., 2011).

At this time, all fifty states in the U.S. have Minor's Consent laws allowing adolescents to consent for certain healthcare services without parental notification (Lerand, 2007). While the

range of services provided confidentially differs among states, these services traditionally include substance use, sexual health, and mental health.

Common Practices

Despite the benefits of confidentiality and recommendations that private time with a clinician begin at 13 years of age, lack of confidential care has been cited as a barrier to adequate adolescent healthcare (Lerand, 2007). Previous research shows that only about half of adolescents (55% females and 49% males) report having time alone with clinicians during preventative health visits (Grilo et al., 2018). Reasons for lack of confidential care include clinician's lack of confidence in behavior counseling skills and clinician's perceived lack of interest from adolescents in time alone (Ham & Allen, 2012).

Factors such as older age, higher income household, and not being enrolled in school are associated with receiving confidential care (Grilo et al., 2018). Adolescents who do endorse risky behaviors including tobacco use, binge drinking, and having ever had sex report higher percentages of receiving private time or discussing confidentiality (Grilo et al., 2018). This finding suggests that despite lack of comfort, clinicians are targeting adolescents who they believe are engaging in behaviors that necessitate confidential discussions. It is also possible that clinicians who serve populations at higher risk or with higher rates of these behaviors are more likely to deliver confidential care consistently.

Gender Differences in Confidential Care

Gender differences have been reported in adolescent health behaviors including substance use, sexual health, and mental health. Males reported higher tobacco use overall (SAMHSA, 2014). Among youth admitted for substance use, more females reported alcohol, while more males reported marijuana as primary substance of abuse. Female adolescents have a higher rate

of chlamydia and gonorrhea, while males have a higher rate of syphilis (CDC, 2017). Gender differences in mental health also exist with female adolescents having higher prevalence of depression and anxiety (SAMHSA, 2014 and CMH, 2017).

In addition, previous reports also show gender differences in adolescent healthcare access and experiences with receiving confidential care. Males have a greater number of risk behaviors, yet a lower rate of preventative care services (Kadivar et al., 2013). Adolescents who had less experience with confidential care may not perceive the value of preventative care (Kadivar et al., 2013). More males, in comparison to females, felt that clinicians would not maintain confidentiality and instead share all information with their parents. Male adolescents also expressed stronger concerns about female family members learning about health risk behaviors.

Females, on the other hand, reported relationships that are more open with their mothers and did not mind their presence when discussing health risk behaviors with their clinicians (Kadivar et al., 2013). They were more likely than males to receive preventative services related to sexual health (Kadivar et al., 2013) and more likely to initiate discussion about sexuality with providers (Clark et al., 2012). Other factors associated with confidential care for female adolescents included older age, being of other or mixed race, having higher family income, ever having had sex, or being seen by a female provider (Kadivar et al., 2013; Grilo et al., 2018).

These gender differences in confidential care experiences can limit recognition and management of important health issues in this age group.

Objective

This study aims to compare the extent to which clinicians discussed substance use, sexual health, and mental health with male vs. female adolescent patients during well-child visits. Secondly, we compare rates of discussion for youth who endorsed behaviors specifically. We

hypothesize that gender differences exist between male and female adolescents in their rate of discussions of high-risk behaviors with clinicians. A better understanding of gaps in confidential healthcare delivery can help improve preventative health services to adolescents.

METHODS

This study is a secondary analysis of data from adolescents (N=440) in the control arm of three studies of multi-risk screening and clinician counseling in primary care settings (Richardson et al., 2019, additional studies in process of submission). The recruitment methods were common among all three studies, and are described below. The adolescent behaviors assessed were also identical in all three studies. The current study analyzed data pertaining to substance use, sexual activity, and mental health concerns specifically. Multi-risk health screening tools were used prior to the scheduled adolescent well visit and a one-day post well-visit survey (modified Adolescent Report of the Visit form) was used to assess clinician counseling on each risk behavior (Lustig et al., 2001) and private time.

Eligibility Criteria

Adolescents aged 13-18 years were eligible to participate in the original studies if they had a well-visit appointment with a primary care clinician (PCP) in any of the 10 participating clinic sites. Clinics were recruited from the Seattle metropolitan area and rural areas in Washington State. Adolescents were excluded if they did not speak English, if their caregiver (parent/guardian) did not speak English, Spanish, Vietnamese, or Somali, if they had a sibling that previously participated, or if they did not have access to a phone or computer. Given the study's goal to evaluate gender differences in discussions with clinicians, three participants who identified as nonbinary or gender fluid were not included in analyses.

Consent

Parent consent and adolescent consent or assent (based on age of youth) were obtained prior to the clinic visit using the following procedure: a letter was sent to parents followed by a phone call to explain the study, then parent consent was obtained to arrange time for youth assent and completion of web-based screening tool assessment. Adolescents who were 18 years old received consent and study materials directly. For participants under 18 years of age, both patient assent and parental consent were obtained. For participants aged 18 years, youth consent was obtained and parental consent was not required. All procedures were reviewed by the Seattle Children's Institutional Review Board (two studies) or Western IRB (one study).

Clinic Visit

This study only used the control group participants; therefore, no study-related baseline screening results were given to clinicians. Primary care clinicians were encouraged to screen and discuss health behaviors as they would routinely do under their usual practice for youth.

Study Procedures

For all three studies, adolescents received a web-based screening tool to identify the presence of health risk related behaviors and a one-day post well-visit follow up survey to assess whether they received private time and discussion of health-risk related behaviors with their clinicians. Only behavioral items that were identical across all three studies were examined (Tables 1 and 2).

Table 1. Screening tool for substance use, sexual activity, and mood

Health Topic	**Timeframe**	**Baseline Question**	**Response Options**
Substance use	In the past year	I have used…	Alcohol Cigarettes/tobacco Marijuana Other drugs None
Driving under the influence	Ever	I have driven drunk or high (asked only if drive a car)	Yes No Unasked
Sexual behavior	Ever	I have had sex	Yes No Thinking about it
Mental Health	In the past 2 weeks	GAD-7 (Generalized Anxiety Disorder 7-item scale) Score	10 or greater = positive screen <10 = negative screen
	In the past 2 weeks	PHQ-9 (Patient Health Questionnaire 9-item depression scale) Score	10 or greater = positive screen <10 = negative screen

Table 2. Follow up survey for provision of private time with provider and discussion of substance use, sexual activity, and mood

Health Topic	**Discussion Questions**	**Response Options**
Private Time	During your doctor visit, did you have some time with your doctor without you parent?	Yes No
Tobacco use	Did your doctor talk with you about tobacco use?	Yes No
Alcohol use	Did your doctor talk with you about alcohol use?	Yes No
Marijuana or other drugs	Did your doctor talk to you about marijuana or other drugs?	Yes No
Driving under the influence	Did your doctor talk to you about drinking/using drugs and driving?	Yes No

Sexual health	Did your doctor communicate this is a safe place for you to talk about sex?	Yes No
	Did your doctor discuss condom use with you?	Yes No
Mental Health	Did your doctor talk to you about depression or moods?	Yes No

Data Analysis

Data from the baseline screening tool and one-day follow up survey were analyzed with STATA analytic software Version X. Fisher's exact test was utilized to test for gender differences in the rate of behaviors, rate of discussion among youth overall, and rate of discussion among youth who endorsed health risk related behaviors. Statistical significance was defined as $\alpha < 0.05$.

RESULTS

Demographics

Out of 440 participants who completed a baseline online survey tool, 415 participants completed the survey at one-day post well-visit follow up. The mean age for participants was 14.6 years old (SD +/- 1.4) with range from 13-18 years of age. Gender was evenly distributed in younger (13-15 years old) and older age (16-18 years old) groups. When examined categorically, 328 (75%) participants ranged from 13-15 years old and 112 (25%) participants ranged from 16-18 years of age. Table 3 summarizes gender and racial distribution of the sample overall.

Table 3. Patient Demographics

	Sample Size n (%)
Gender	
Male	221 (50)
Female	219 (50)

Race	
White	286 (65)
Asian American or Pacific Islander	48 (10.9)
Mixed Race	47 (10.7)
Hispanic	21 (4.77)
African American	20 (4.5)
Native American	1 (0.23)
Other	17 (3.9)

Rate of Endorsed Behaviors

Of the 440 participants surveyed, there was a similar distribution by gender of endorsed behaviors including substance use (alcohol, cigarette/tobacco use, marijuana and other drugs), driving under the influence, and sexual activity (Table 4). Females had a higher rate of mental health concerns (depression and/or anxiety) when compared to males (p=0.003).

Table 4. Gender Distribution of Behaviors

Behavior	**Endorsed Behavior n (%)**	**Behavior by Gender n (%)**		**p-value**
		Male (n=221)	**Female (n=219)**	
Alcohol Use	34 (8)	18 (8)	16 (7)	0.86
Cigarette/ Tobacco Use	8 (2)	4 (2)	4 (2)	1
Marijuana/ Other Drug Use	34 (8)	20 (9)	14 (6)	0.37
Driving under the influence	8 (2)	4 (2)	4 (2)	1.0
Sexual Activity	20 (4.5)	11 (5)	9 (4)	0.82
Depression and/or Anxiety	61 (14)	20 (9)	41 (20)	0.003*

* p-value < 0.05

Private Time with Clinician

At the time of one-day post-visit follow up survey, 415 adolescents responded. The majority of these adolescents recalled private time with their clinicians (77% overall): male 80% (168/210), female 75% (153/205) (p=0.2).

Discussion Recall: One -day Post Well-Visit Follow Up Survey

Comparison of the rate of discussion by gender of participants for behaviors of substance use (alcohol, cigarette/tobacco use, marijuana and other drugs), driving under the influence, sexual activity, and mental health concerns (depression and/or anxiety) showed no statistically significant differences (Table 5).

Table 5. Gender Distribution in Report of Discussion of Health Risk Behaviors

Behavior	**Overall Discussion n (%)**	**Discussion by Gender n (%)**		**p-value**
		Male (n=210)	**Female (n=205)**	
Alcohol	245 (59)	124 (59)	121 (59)	1.0
Cigarettes/ Tobacco	221 (53)	114 (54)	107 (52)	0.07
Marijuana/ Other Drugs	229 (55)	121 (58)	108 (53)	0.33
Driving under the influence	86 (21)	44 (21)	42 (20)	1.0
Sexual Activity	288 (69)	151 (72)	137 (67)	0.29
Mental Health	251 (61)	124 (59)	127 (63)	0.48

Discussion for Youth Who Endorsed Health Risk Behaviors

Among youth who endorsed specific health risk behaviors, there were no statistically significant differences in clinician discussion by youth gender, with the exception of discussion of sexual health (Table 6). Among youth who were sexually active, males were more likely than females to be told that their visit was a safe place to talk about sex (p=0.02). A similar trend was seen regarding discussion about condom use although not statistically significant, males 60% (6/10) and females 38% (3/8). Of the nine participants that were both sexually active and recalled discussion of condom use, two participants (1 male, 1 female) did not recall having private time with a clinician.

Table 6. Rate of Discussion with Youth Who Endorsed Health Risk Behaviors

Activity	**Discussion (# discussed/# active)**	**Discussion by Gender (# discussed/# active)**		**p-value**
		Male	Female	
Alcohol	71% (22/31)	73% (11/15)	69% (11/16)	1.0
Cigarettes/ Tobacco	75% (6/8)	100% (4/4)	50% (2/4)	0.43
Marijuana/ Other Drugs	53% (16/30)	50% (8/16)	57% (8/14)	0.73
Driving under the influence	50% (4/8)	50% (2/4)	50% (2/4)	1.0
Safe place to talk about sex	78% (14/18)	100% (10/10)	50% (4/8)	0.02*
Discussion of Condom Use	50% (9/18)	60% (6/10)	38% (3/8)	0.64
Mental Health	72% (41/57)	58% (11/19)	79% (30/38)	0.12

* p-value <0.05

DISCUSSION

This study found no significant difference between male and female adolescents for provision of private time with a clinician. In fact, the majority of adolescents (77%) in this study received private time with their clinicians, a rate higher than previously reported (Grilo et al., 2018). Likewise, there was no significant difference by gender in discussion of high-risk behaviors with clinicians. Among youth who endorsed behaviors, males and females received discussion with clinicians at similar rates for all behaviors, with the exception of sexual health. In this category, contrary to previous literature, males were more likely than females to be informed that the visit was a safe place to talk about sex (Kadivar et al., 2013).

Miller et al. in 2018 found that parents could have an influence over whether or not their children receive confidential discussion of behaviors, including sexual health. In addition, parents express greater willingness to have confidential time provided to their male over female adolescents (Miller et al., 2018). This factor could have contributed to the unexpected gender difference in rate of discussion of sexual health. In addition, compared to youth who were told that the visit was a "safe place to talk about sex", a smaller amount of sexually active youth recalled discussion of condom use, which suggests an area of improvement for sexual health counseling.

The rate of youth who endorsed health risk behaviors in this study (2-14%) was relatively lower than national data (CDC, 2018; CDC, 2019; Guttmacher, 2017; CMH, 2017). In addition, the majority of adolescents in this study was of a younger age group, compared to common age of onset of substance use, sexual activity, and mental health concerns. Factors such as endorsement of behaviors and older age have been associated with higher rate of receiving confidential care (Grilo et al., 2018). It is presumed that because this sample was younger and

lower risk, clinicians in this study may have been less likely to provide confidential discussions of high-risk behaviors.

Providing confidential care and counseling at a young age can help reduce rates of health risk behaviors and healthcare complications in the future (Ham & Allen, 2012; Ozer et al., 2011; Grilo et al., 2018). This study found that despite high rates of adolescents receiving private time with clinicians (77%), rates of discussion of all topics was lower than private time received (21% for driving under the influence to 69% for sexual activity). This discrepancy suggests that despite having private time with the adolescent alone, many health risk behaviors were not reviewed consistently and that clinicians missed opportunities to offer anticipatory guidance to adolescents.

LIMITATIONS

This study has several limitations. As a secondary analysis, evaluation is limited by the availability of variables initially measured. Participants were also young with low rates of endorsed behaviors, limiting statistical power of the analysis. Given the nature of data collection, there may be concerns for response bias; however, past research has shown that adolescent self-report of healthcare services is reliable (Klein et al., 1999) and since the follow up survey was provided 1 day after each participant's well visit, recall bias is unlikely. Given time constraints during primary care visits, for topics where youth did not endorse behaviors, providers may choose to provide anticipatory guidance through educational handouts or electronic clinic visit summaries. While these resources may provide beneficial information, lack of discussions may limit behavioral changes that face-to-face discussions can promote.

CONCLUSION/ RECOMMENDATIONS

In conclusion, with the exception of sexual health discussions, this study did not show statistically significant differences in the rate of health risk discussions for male and female adolescents. For discussion of sexual health, it is notable that males who endorsed behaviors had a higher rate of recalling discussions, which was unexpected and warrants further evaluation. While the rate of private time with a clinician was higher than previous literature, rate of discussion for health risk behaviors was lower than rate of private time offered, indicating an area for improvement in the delivery of anticipatory guidance to youth prior to their engaging in risky behaviors. Confidential and private time with a clinician are crucial to the delivery of comprehensive health care to adolescents and should start at a young age.

Additional studies evaluating discussions during private time with a clinician and long-term behavioral changes in youth can help improve delivery and efficacy of confidential health services for adolescents. A qualitative evaluation to assess youth's willingness to disclose behaviors can help identify ways to engage adolescents in discussion of sensitive health topics. One previous study also found that resident pediatricians demonstrated increase in self-preceived skills for adolescent healthcare after completion of their adolescent medicine rotation (Ruedinger et al., 2018). Additional evaluations of clinicians' comfort level to initiate discussions of health risk behaviors with adolescents can help identify areas for improvement that can begin during the training of clinicians and enhance their healthcare delivery later in practice.

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