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How Mental Health Interviews Conducted Alone, in the Presence of an Adult, a Child or Both Affects Adolescents' Reporting of Psychological Symptoms and Risky Behaviors

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Abstract

The normative process of autonomy development in adolescence involves changes in adolescents' information management typically characterized by decreasing disclosure and increasing concealment. These changes may have an important impact on the early detection and timely treatment of mental health conditions and risky behavior. Therefore, the objective was to extend our understanding of how these developmental changes in adolescent disclosure might impact adolescent mental health interviews. Specifically, we estimated the effects of third party presence and type of third party presence (adult, child, or both) on adolescents' reports of psychiatric symptoms, substance use, suicidal behavior, and childhood adversity. In this representative sample of 3005 adolescents from Mexico City (52.1 % female), administered the World Mental Health Composite International Diagnostic Interview (WMH-CIDI-A), adult presence influenced reporting the most; in their presence, adolescents reported more ADHD, parental mental illness and economic adversity, but less panic disorder, PTSD, drug use and disorder, and suicidal behavior. The presence of children was associated with increased odds of reporting conduct disorder, opportunity for drug use, parental criminal behavior, neglect, and the death of a parent. While adolescent information management strategies are normative and even desirable as a means of gaining emotional autonomy, they may also interfere with timely detection and treatment or intervention for mental health conditions and risky behaviors. Research and practical implications of these findings are discussed.

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Authors' Contributions

A.H. participated in the interpretation of the data and drafted the manuscript; C.B. conceived of the study, coordinated the study, and participated in the drafting of the manuscript; E.M. participated in the design and performed the statistical analysis; L.C. coordinated quality control and the acquisition of data. She received her masters of public mental health from the National Autonomous University of Mexico; M.E.M.M. participated in the design and coordination of the study.

Conflicts of Interest

The authors report no conflict of interests.

Ethical Approval

This study was approved by the internal review committee of the National Institute of Psychiatry Ramón de la Fuente Muñiz.

Human and Animals Rights

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Keywords

Adolescence; Privacy; Information management; Social desirability; Mental health; Mexico

Introduction

The increasing autonomy of adolescence has important implications for adolescents' information management; in other words, how much, what, to whom and under what conditions adolescents disclose or conceal information (Campione-Barr et al. 2015; Tilton-Weaver 2014). Autonomy development through the realignment of parent–child relationships in adolescence is achieved through a process of lessening parental control, and reduced parental knowledge and adolescent willingness to disclose (Keijsers and Poulin 2013). This is important because the developmental decrease in disclosure and increase in concealment specifically related to risky behaviors and psychological distress might limit timely detection and treatment of mental disorders during a stage of development with high risk for the onset of psychiatric disorder.

Disclosure by adolescents is mediated by adolescents' attitudes regarding what parents have a right to know (Chan et al. 2015). U.S. adolescents have been found to feel more obligated to disclose to parents prudential information (defined as information that pertains to one's comfort, safety and health such as risky behaviors) than personal (defined as that pertaining to privacy, preferences, and control over one's body) or conventional information (that pertaining to social norms) (Smetana et al. 2006). However, adolescents who engage in risky behavior tend to disclose less about prudential behaviors than personal or multifaceted ones. Adolescents fail to disclose prudential behaviors for fear of disapproval or punishment (Smetana et al. 2009) whereas they fail to disclose personal information because they consider such information legitimately under their personal control and they do not feel obliged to share this domain of information with parents (Smetana and Asquith 1994). Additionally prior research has found that U.S. adolescents disclose more to mothers than to fathers (Smetana et al. 2006) and more to mothers than to siblings (at least in early adolescence, although this gap between mothers and siblings narrows toward emerging adulthood; Campione-Barr et al. 2015). Both depressive symptomatology and risky behaviors have been negatively associated to disclosure with both parents and siblings (Campione-Barr et al. 2015; Kerr and Stattin 2000; Laird et al. 2013).

Because adolescents do not seek treatment for themselves, detection and treatment of mental disorders and risky health behaviors in adolescents requires detection by an adult third party such as parent or teacher and thus largely depends on adolescent disclosure and information management. To evaluate sensitive topics with adolescents in clinical settings and in research, including health risk behavior, mental disorders, and adverse experiences, self-reporting is commonly used to gather this information.

However, questions regarding adolescent self-report stem from numerous findings of commonly discrepant reports between adolescents and their parents (e.g., Jensen et al. 1999; Rescorla et al. 2013; Salbach-Andrae et al. 2009; Seiffge-Krenke and Kollmar 1998). Most of these aforementioned studies find that parents report more externalizing symptoms, that

adolescents report more internalizing symptoms and that there are greater discrepancies for externalizing than internalizing symptoms. Conclusions from this research have suggested that neither adolescent nor parent report should be considered true or untrue, but rather that both informants likely contribute useful albeit discrepant information related to clinically meaningful conditions and associated impairment. The possible exceptions are ADHD and oppositional defiant disorder for which adolescents' reports alone are found to have less clinical validity (Jensen et al. 1999).

Why might adolescents or persons of any age use information management strategies involving incomplete disclosure or concealment? When asked sensitive questions, people might misreport information because they view the questions as intrusive, worry that disclosure of the information might bring negative consequences, or want to present themselves in a more favorable light by responding in a socially desirable manner (Holtgraves 2004; Johnson and Van de Vijver 2002; Krumpal 2013; Tourangeau and Yan 2007). This misreporting or concealing of information for sensitive topics is a notable source of error attributed to bias in survey estimates, may also be relevant in clinical settings, and is largely dependent on the situation (Krumpal 2013; Tourangeau and Yan 2007). When filtering responses to be more desirable or acceptable, respondents aim to avoid embarrassment when speaking with either the interviewer or a third party bystander who may be present (Holtgraves 2004; Krumpal 2013; Mneimneh 2012; Tourangeau and Yan 2007). If the bystander is already aware of the information being asked and can serve as a "truth control," the respondent will be less inclined to report dishonestly (Mneimneh 2012; Tourangeau and Yan 2007). Anonymous reporting is an option in some cases, and several studies suggest that anonymity increases truthful responses for sensitive information (Krumpal 2013; Ong and Weiss 2000; Tourangeau and Yan 2007). Contrasting this, anonymity cannot be assumed to automatically increase the quality of reporting, because confidential questionnaires may give the same results as anonymous questionnaires (van de Looij-Jansen et al. 2006). Additionally, a 2002 study by Newman et al. reports that taking the human interviewer out of the picture may reduce the chance that respondents will report psychological symptoms due to the impersonal nature.

Another influence on self-reports is the respondent's culture. It dictates both what is deemed a desirable response and the privacy, or lack thereof, of the interview setting (Diop et al. 2015; Hofstede et al. 2010; Mneimneh 2012; Pollner and Adams 1994). For example, it is more common in a collectivist culture for a family member or friend to invade privacy, compared to an individualistic culture, where privacy is more prioritized (Hofstede et al. 2010). Cultural norms may dictate how easy or difficult it is for an interviewer to ask for privacy during the interview (Mneimneh 2012). While Tilton-Weaver (2014) found that relationship dynamics and adolescent delinquent behaviors play a role in adolescents' information management, she suggested that future research should sample more divergent cultures where strong expectations to conform to the rules and expectations of parents and other adults might affect this relationship. In one study with Japanese adolescents, levels of adolescent disclosure to parents, and perceptions of the obligation to disclose to parents were less than typically found in U.S. adolescents (Nucci et al. 2014). These authors interpreted these results to reflect a cultural tendency in Japan to view adolescents' actions as matters of personal responsibility. One of the few studies of a Latino population, Puerto

Rican adolescents in the U.S., showed that greater adherence to Latino family values was associated with more disclosure and less lying to mothers (not so with fathers) regarding prudential issues, but not peer-multifaceted issues (Villalobos and Smetana 2012). A comparison of U.S. adolescents from Mexican, Chinese and European backgrounds found Mexican–American youth to disclose risky prudential behaviors less to mothers than European American teens (Yau et al. 2009). The authors concluded that, since Mexican culture emphasizes more conformity to external standards, that these adolescents may have felt that they had more at stake than other adolescents when violating parental rules.

Interview settings with the presence of a third party have shown an association with how interviewees respond to sensitive topics, especially underreporting or over reporting of sensitive information (Diop et al. 2015; Krumpal 2013; Taietz 1962; Tourangeau and Yan 2007). Information management in adolescence is likely to be more pronounced than in other stages of life given the developmental process toward autonomy on the one hand and the power of adults over adolescents to punish on the other. Adolescents interviewed at home, at school, or in a clinical setting, may have varying willingness to disclose sensitive information depending on the context. At home, typically in the presence of third parties who may have the power to punish the adolescent or disprove of certain behaviors, typically a parent, adolescents tend to underreport risky health behaviors, such as alcohol and substance use (Aquilino et al. 2000; Brener et al. 2006; Hoyt and Chaloupka 1994; Kann et al. 2002; Krumpal 2013). In Aquilino et al.'s 2000 study, the presence of a sibling showed fewer effects on reporting. In these general population household surveys, interviewing the participants privately is often not possible. This problem may be even more pronounced in developing countries where the number of family members in the household may be larger, including extended family members, while at the same time the size of the home smaller with fewer private spaces (Aquilino 1997; Mneimneh 2012). While reporting information at school, in the presence of peers or friends, the literature shows an over reporting of these risky health behaviors, in order to gain acceptance or seem “cool” (Brener et al. 2006; Gfroerer et al. 1997; Hoyt and Chaloupka 1994; Kann et al. 2002). However, Davis et al.'s 2010 study reports the opposite and finds that adolescents understate alcohol consumption, in order to present themselves more favorably. In clinical settings, it is usually possible to interview the adolescent in private, where more confidentiality is reassured, and thus, they may report more openly (Gans and Brindis 1995).

Like risky health behaviors, mental disorders are a sensitive, and often stigmatized, issue. For mental disorders, there are no reliable biomarkers to diagnose disorders and, thus, the use of standardized diagnostic interviews is the main form of diagnosis (Kessler and Ustun 2004). With such interviews, respondents may not want to report symptoms or feel embarrassed to report them in the presence of a third party (Epstein et al. 2001). However, Pollner and Adams (1994) reported that the presence of a third party was not related to reporting symptoms of possible mental disorders, and responses likely reflected methodological, situational, and cultural influences. Overall, there is scant literature available concerning the impact of a third party presence, such as a parent, a sibling or other family member, during adolescent mental health interviews and none to our knowledge in the adolescent population of Mexico City.

The Current Study

The objective of this article is to build on research in the area of adolescent information management, extending our understanding of how these developmental changes in adolescent disclosure might impact adolescent mental health interviews. More specifically, we estimate the effects of third party presence on adolescents' reports of psychiatric symptoms meeting diagnostic criteria, substance use, suicidal behavior, and childhood adversity. Additionally, the effect is examined by type of third party present (adult, child, or both).

Because the literature shows that adolescents often fail to disclose prudential information that they fear will get them in trouble, we hypothesize that rates of psychiatric disorders, substance use, and suicidality will be lower in the presence of an adult, that rates of conduct problems and substance use, will be higher when only children are present, due to adolescents' desire to show off in front of peers, and that childhood adversities will be higher when an adult is present, as parents are likely to already possess this information and thus may serve as a "truth control".

Methods

Participants

Data were collected as part of the 2005 Mexican Adolescent Mental Health survey, with 3005 adolescent participants, aged 12–17 years old, representative of the almost two million adolescents living in Mexico City. They were chosen from a stratified multistage area probability sample. Census count areas, cartographically defined and updated for the XII Population and Housing Census, were the primary sampling units for all strata. City blocks with probability proportional to size were chosen as the secondary sampling units. The Kish method of random number charts was used to randomly select one eligible adolescents from each household, and the response rate was 71 %. As described previously, the sociodemographic distribution was similar to the distribution of the adolescent population in Mexico City: one half female, nearly 80 % students, two-thirds residing with both parents, and the socioeconomic level of the parents typically being low (Benjet et al. 2009).

Procedures

Adolescents and their parents were given both a verbal and written explanation of the study, followed by the parent or guardian providing signed informed consent and the adolescent providing assent. Adolescent interviews were conducted in their home by extensively trained lay interviewers and each participant and their family were offered information on local mental health services. The Internal Review Board of the National Institute of Psychiatry Ramon de la Fuente approved this project.

Measures

The computer-assisted, fully structured adolescent version of the World Mental Health Composite International Diagnostic Interview (WMH-CIDI-A; Kessler et al. 2009; Merikangas et al. 2009) was administered to participants. This research tool collects

sociodemographic and other information to generate diagnoses of *DSM-IV* disorders (anxiety, mood, substance and disruptive behavioral disorders), other risk behaviors such as substance use and suicidal behavior, and risk factors such as childhood adversity. The interviewer read each question aloud to the participant and input responses directly into the computer. This computer-assisted version includes complex logical skip patterns such that each particular question posed was chosen by the computer based on the previous responses of the participant. Consistency check systems were in place to ensure that inconsistent responses were probed and corrected.

Socio-Demographic Variables—The socio-demographic variables examined in this study were asked about in the WMH-CIDI-A. This includes the sex of the participants, age, family constellation, student status, parental education and parental income. Family constellation was categorized as living with both biological parents or not living with both biological parents (as reported by the adolescent). Participants were considered students if currently enrolled as a student. The adolescents were asked about the educational attainment of each of their parents which was then categorized as none/primary (six or less years of education), secondary (7–9 years of education), high school (10–12 years of education) or college (thirteen or more years of education); the score of the parent with the highest level of education was used. Parents reported family income was categorized into tertiles.

Psychiatric Disorder—The WMH-CIDI-A begins with a screening section which includes a few screening questions for each disorder. Adolescents who respond having ever experienced the symptoms in the screening section then are asked more in depth questions for each disorder for which they screened positive. This article reports the psychiatric disorders for which participants met diagnostic criteria according to the diagnostic and statistical manual of mental disorders, fourth edition (DSM-IV; American Psychiatric Association 1994) in the prior 12 months. All disorders used organic exclusion rules as well as hierarchy definitions in order to avoid double counting of disorders in the same person. The disorders are grouped as follows: anxiety disorders (panic disorder, generalized anxiety disorder, agoraphobia, social phobia, specific phobia, separation anxiety disorder and posttraumatic stress disorder (PTSD)), mood disorders (major depressive disorder and bipolar disorder (I and II)), disruptive behavior disorders (intermittent explosive disorder, oppositional-defiant disorder, conduct disorder and attention-deficit/hyperactivity disorder) and substance use disorders (alcohol abuse or dependence and drug abuse or dependence). A comparison of diagnosis based on the adolescent CIDI with blinded clinical interviews using the K-SADS showed generally good diagnostic concordance (Kessler et al. 2009).

Substance Use—The substance use section of the WMH-CIDI-A asks adolescents about their lifetime use (defined as consumption of the substance at least once at any time in one's life) of alcohol and illicit drugs, opportunity to use alcohol and drugs, and substance abuse and dependence. The illicit drugs included marijuana, cocaine in any of its forms, tranquilizers or stimulants used without a medical prescription such as methamphetamine, and other substances (e.g., heroin, inhalants, LSD, etc.) that were grouped as “other drugs.” Participants were asked about each category of drugs openly and then presented with a list of numerous different street names for these drugs. The questions regarding opportunity to

use alcohol and drugs were posed after the questions about alcohol and drug use such that opportunities to use alcohol and drugs referred to all the alcohol and drugs previously presented to the respondents. All participants were asked about opportunities regardless of whether they had previously endorsed consuming any substance. Opportunity to use alcohol and opportunity to use drugs were asked about separately and defined as having the opportunity to use any substance regardless of whether or not the respondent did so. They were given as an example that someone offered them drugs or that they were present when others were using and could have done so if he or she chose to.

Suicidal Behavior—The suicidal behavior section had a somewhat different format than the other sections of the WMH-CIDI-A such that the interviewer did not read the questions aloud to the adolescent, but rather asked the respondent to report whether they had experienced any of three experiences which were printed in a booklet and referred to by letter. These experiences were “Have you ever seriously thought about committing suicide?,” “Have you ever made a plan for committing suicide?,” and “Have you ever attempted suicide?”

Childhood Adversity—Twelve different types of childhood adversity were evaluated and classified as present or not present using the same criteria as the World Mental Health Survey Initiative (Green et al. 2010). These included parental mental illness, parental substance problems, parental criminal behavior, witnessing family violence, physical abuse, sexual abuse, neglect, death of a parent, parental divorce, other parent loss, life-threatening physical illness, and economic adversity. Parental pathology used questions from the family history research diagnostic criteria interview and included *parental mental illness*, *substance problems*, and *criminal behavior* (Endicott et al. 1978). *Physical abuse* and *witnessing family violence* were evaluated with a modified version of the Conflict Tactics Scale (Strauss 1979). *Neglect* was assessed with questions often used in child welfare studies (Courtney et al. 1998). *Sexual abuse* was determined by reading a definition of rape and a definition of other forms of abuse or molestation. To be consistent with the other World Mental Health Surveys, chronic sexual abuse was defined as reporting at least three episodes of sexual abuse thus representing chronic sexual abuse as opposed to acute one time trauma (Kessler et al. 2010). To assess parental loss, the adolescents were asked whether they lived with both of their parents all of their lives. Those who did not were asked whether this was because their parents had separated or divorced, a parent had died or some other reason. Those endorsing separations of 6 months or more from either parent for some other reason were classified as *other parental loss*, with reasons ranging from having gone to boarding school, having left home, or that their parent was in prison. *Physical illness* is based on the adolescent’s report of having experienced a life-threatening physical illness. *Family economic adversity* was determined by the family ever receiving money from a government assistance program for poor families or by lack of parental employment most or all of the time during the participant’s childhood.

Third Party Presence—An interviewer observation section at the end of the WMH-CIDI-A, required the interviewer to register if anyone was present during the interview aside from

the adolescent, and if so who. Those responses were categorized as follows: (1) no one, (2) only children, (3) children and adults, or (4) adults only.

Statistical Analysis

Data were weighted to adjust for non-response, differential probabilities of selection, and post-stratification to the adolescent population of Mexico City according to the year 2000 Census in the target sex and age range. The prevalence of reported *DSM-IV* diagnoses, substance use, suicidal behavior and childhood adversity were calculated by privacy category. Then, age- and sex-adjusted odds ratios were calculated in SUDAAN software (Research Triangle Institute 2009) for the association of privacy with the *DSM-IV* diagnoses, substance use, suicidal behavior and childhood adversity.

Results

Only 42.7 % of interviews were conducted with the adolescent alone, whereas children only were present in 3.4 % of interviews, both children and adults were present in 4.8 %, and at least one adult was present in 49.1 % of interviews. Of the adults that were present 84.6 % was a parent. Sociodemographic characteristics are depicted in Table 1. Third party presence varied by sex, age, and parental education. A greater proportion of interviews with females, versus males, had only children present; families with lower parental education tended to have children present, as well. More interviews were conducted alone when the interviewee was an older adolescent versus a younger adolescent.

The association of third party presence with *DSM-IV* diagnosis adjusted by age and sex is shown in Table 2. Having only children present increases the probability of reporting any disruptive behavior disorder (OR 1.74; 95 % CI 1.21–2.51), which is explained primarily by the threefold odds of reporting a conduct disorder in particular (CI 1.17–7.65). The presence of both children and adults also increases the probability of reporting any disruptive behavior disorder (OR 1.80; 95 % CI 1.05–3.10), but is explained by the increased odds of reporting intermittent explosive disorder (OR 2.35; 95 % CI 1.30–4.22). Having only adults present increases the odds of reporting attention-deficit/hyperactivity disorder (ADHD) by 83 % (95 % CI 1.08–3.10) but reduces the odds of reporting panic disorder (OR 0.62; 95 % CI 0.40–0.95), PTSD (OR 0.55; 95 % CI 0.35–0.86), and a drug use disorder (OR 0.17; 95 % CI 0.07–0.38).

Table 3 presents the association of substance use and third party presence, adjusted by age and sex. With only children present, there are increased odds of reporting a drug opportunity (OR 1.73; 95 % CI 1.10–2.70). Having both children and adults present is unrelated to reporting of substance use. However, when only adults are present, odds are reduced by roughly half for reporting drug use (OR 0.47; 95 % CI 0.31–0.73).

The association between suicidal behavior and third party presence is shown in Table 4. Having children only or children and adults present was unrelated to reporting of suicidal behavior. However, having only adults present reduces the odds of reporting suicidal behavior with ORs ranging from 0.48 for suicide attempts to 0.68 for suicidal ideation.

Table 5 depicts the association between childhood adversity and third party presence. With only children present, there is a greater probability of reporting the following: parental criminal behavior, neglect, and parent death with ORs ranging from 1.88 for death of a parent to 2.44 for parental criminal behavior. When children and adults are present, there is a greater probability of reporting parental mental illness (OR 2.14; 95 % CI 1.34–3.41). With only adults present, there is a greater probability of reporting both parental mental illness (OR 1.39; 95 % CI 1.13–1.71) and economic adversity (OR 1.22; 95 % CI 1.01–1.46).

Discussion

The normative process of autonomy development in adolescence involves changes in adolescents' information management typically characterized by decreasing disclosure and increasing concealment of information (Campione-Barr et al. 2015; Tilton-Weaver 2014). These changes may have an important impact on the early detection and timely treatment of mental health conditions and risky behavior. These developmental changes in information management depend on various factors including the domain of the information managed and the person to whom one discloses (mother, father, sibling, peer, other adult) (Smetana et al. 2006; Campione-Barr et al. 2015). While previous studies have found that less disclosure and increased concealment is related to delinquent behavior (Campione-Barr et al. 2015; Kerr and Stattin 2000; Laird et al. 2013) and that there are important discrepancies between children's and parental reports of psychological distress and risky behavior (Jensen et al. 1999; Rescorla et al. 2013; Salbach-Andrae et al. 2009; Seiffge-Krenke and Kollmar 1998), the purpose of this investigation was to understand how the presence of third parties during adolescent mental health interviews influences the reporting of symptoms used to diagnosis disorders and other risk behavior. We found that the presence of third parties influences the responses provided by adolescents, but this reporting varies according to whom is present and the type of symptom or behavior asked about.

Adults present during the interview influence adolescent disclosure the most; in the presence of only adults, adolescents were more likely to report ADHD, parental mental illness and economic adversity. Most adults present were the parent, as such, they likely have better insight into their own mental health and their family's economic status compared to adolescents, and thus may have stepped in to provide information. Parents may also have observational insight regarding their adolescent's ADHD that the adolescent lacks or is ashamed to mention. In fact, prior research has found ADHD (as well as oppositional defiant disorder) to be the only disorders for which adolescent report alone of symptoms is unrelated to impairment (Jensen et al. 1999). Inattentive, impulsive and hyperactive adolescents are likely to have little insight into their condition due to the cognitive and attentional characteristics of the disorder. While the presence of adults was associated with greater odds of reporting the three abovementioned conditions, it was also associated with reduced odds of reporting the following seven conditions: panic disorder, post traumatic stress disorder, drug abuse or dependence, drug use, suicide ideation, suicide plan, and suicide attempt. Our findings corroborate those of previous studies (Aquilino et al. 2000; Brener et al. 2006; Kann et al. 2002; Krumpal 2013) indicating that adolescents are less inclined to report risky behavior in the presence of third parties who would disapprove and who have the authority to punish them. The reduced odds of PTSD may be due to

adolescents' not wanting to disclose to their parents or other adult the traumatic event that led to the PTSD (such as a sexual abuse). Prior research on the disclosure of sexual abuse has shown many reasons why young people do not disclose, including fear of not being believed, shame or self-blame about the abuse, or fear of the consequences to themselves or others of disclosure (McElvaney et al. 2014). Why there might be reduced reporting of panic disorder is unclear.

The presence of only children led to increased odds of reporting conduct disorder, any disruptive behavior disorder, opportunity for drug use, parental criminal behavior, childhood neglect, and the death of a parent. The threefold increased reporting of conduct disorder might be due to the adolescent "showing off" in front of their peers (Brenner et al. 2006). Impulse control disorders are marked by the inability to resist a temptation or impulse to act in a way that is harmful to the person or others. If the children present during the interview have witnessed instances of the disruptive behavior, the affected adolescent might feel less pressure to conceal what is already known and may even feel compelled to disclose as not to appear to lie in front of this person. Importantly, the symptoms of disruptive behavior disorders can be observed and do not require the adolescent to have disclosed these symptoms to the sibling for the sibling to know them to be true. Finally, if the child is a sibling, they have likely experienced the same upbringing and can attest to childhood adversities, including parental criminal behavior, childhood neglect, or death of a parent. The adolescent may feel more compelled to disclose these events knowing that the sibling knows this to be true.

When adults and children were present, there were greater odds of reporting intermittent explosive disorder, any disruptive behavior disorder, and parental mental illness. Again, if these third party members have witnessed intermittent explosive bouts or disruptive behaviors, and parental mental illness, there would be no need for the adolescent to conceal it and he or she may even feel more compelled to disclosure in order to not appear to be lying in front of the third parties. Also, the parent may assist in the reporting of this topic, even if the children were not aware, in order to provide the most accurate assessment.

Interestingly, the presence of another person, either adult or child, did not seem to influence reports of most anxiety disorders (except panic and PTSD) or any mood disorder, suggesting that overall symptoms of anxiety and mood disorders may be considered less shameful or embarrassing than those of other disorders. The presence of a third party also did not influence reports of alcohol use or disorder. This may be due to the cultural acceptance or tolerance of adolescent drinking in Mexico City such that adolescents do not feel the need to hide this from their parents (Benjet et al. 2014).

Some limitations of the study must be acknowledged. Directionality or causality cannot be ascertained for the associations under question. It might be that a parent is less likely to leave home alone or to allow a teenage son or daughter with ADHD to be interviewed alone, and perhaps an adolescent with a drug use disorder is more likely to be found at home without a parent as parental neglect is considered a risk factor for substance disorders (Snyder and Merriitt 2015). Or similarly, a parental death, parental neglect and parental criminal behavior may lead to adolescents' being home with other children in the absence of

parental supervision. While these alternate explanations are possible, it is important to keep in mind that, in all cases, parents gave parental consent for the interview and an adult was present somewhere in the household even if the interview was conducted in a private room, thus minimizing this explanation. Further studies should look at third party presence and disclosure in an experimental design in order to gain a fuller understanding of directionality and causality. Despite these limitations, this study has strengths, including sampling the general adolescent population of this area. This is notable, because nearly one-third (31.8 %) of 15–17 year olds in Mexico are no longer in school (Instituto Mexicano de la Juventud 2005), and thus cannot be traced through studies that use only school populations. Additionally, these data come from a developing country and a cultural context different from where prior studies on the effect of third party presence have been conducted, extending our knowledge of how privacy may affect response bias in different cultural contexts.

The findings of this study have both research and practice implications. While it is often not possible in research to determine the privacy of an interview, especially in community studies, data such as these can provide information for weighting prevalence estimates according to if and who was present during the interview to obtain more accurate estimates. In both research and clinical settings, these findings can orient the researcher or clinician interviewing adolescents on whether or not to have a third party present depending on the type of information one is assessing in order to obtain less biased information. For example, it might be beneficial to have a parent present when assessing ADHD or family financial difficulties, but if one is assessing PTSD or suicidal behavior one should attempt a private interview. These findings also suggest what types of disorders, behaviors and experiences are more embarrassing or stigmatized in the Mexican adolescent population. Interestingly, mood, most anxiety disorders and alcohol use do not appear to be embarrassing to these adolescents whereas panic disorder, PTSD, drug use disorders and suicidal behavior may be. Such information may be useful in order to target and reduce stigma associated to these particular disorders. Finally, adolescents are at a stage when they have more insight into their internal feelings and have more information regarding their experiences than other informants, yet may not be motivated to disclose sensitive information in a clinical setting if they did not choose to seek services, but rather were brought by their parents or obliged by their schools, such that this is a population that may be more affected by third party presence than those in other stages of life. Therefore, whether to conduct adolescent mental health interviews alone or in the presence of others, and the type of third party presence, should be considered by both researchers and clinicians.

Conclusion

As adolescents develop, they have an increasing sense of privacy and emotional autonomy (Smetana and Asquith 1994). Adolescents may disclose, partially disclose or even conceal information that they consider either subject to punishment or disapproval or not obliged to share (Smetana et al. 2009). Expanding on prior knowledge of adolescents' information management with parents and siblings (Campione-Barr et al. 2015; Chan et al. 2015; Laird et al. 2013; Tilton-Weaver 2014) and findings regarding adolescent and parental discrepancies on reports of adolescent risk behaviors and mental health (Jensen et al. 1999;

Rescorla et al. 2013; Salbach-Andrae et al. 2009; Seiffge-Krenke and Kollmar 1998), this study finds that, when interviewed by a stranger, having an adult, child or both present impacts on adolescents' disclosure of prudential information. Disclosure depended on the type of third party presence and type of information solicited. Adolescent disclosure in this study was most affected by adult presence, increasing disclosure for a few topics (ADHD, parental mental illness and economic adversity) and decreasing disclosure for many topics (panic disorder, PTSD, drug use and disorder, and suicidal behavior). Culture may also play a role in adolescents' information management and this study is unique in providing insights into the information management of a representative sample of adolescent from Mexico City. While a previous study with Mexican–American adolescents found that they disclose prudential information to mothers less than European American adolescents (Yau et al. 2009), disclosure for particular themes are likely dependent on the cultural tolerance or acceptance of the behavior or condition as well as the adolescent's cultural belief on parent's rights to certain domains of information. While adolescent information management strategies are normative and even desirable as a means of gaining emotional autonomy, they may also interfere with timely detection and treatment or intervention for mental health conditions and risky behaviors. This study contributes an original understanding of how adolescents manage information regarding sensitive topics of mental health and health behaviors to a stranger depending on the presence of third parties, the type of third party present, and the type of solicited information.

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Table 1
Sociodemographic characteristics by third party presence in adolescent mental health interviews

Sociodemographic characteristics	Third party presence						df	χ ²	p						
	No one present			Children only						Children and adults			Adults only		
	n	%	se	n	%	se				n	%	se	n	%	se
Sex															
Male	631	51.96	2.06	40	40.98	4.26	55	38.62	3.38	697	49.83	1.06			
Female	638	48.04	2.06	61	59.02	4.26	88	61.38	3.38	762	50.17	1.06			
Age (years)															
12–14	695	44.77	1.55	60	53.16	4.09	93	58.51	3.67	895	52.09	1.63			
15–17	574	55.23	1.55	41	46.84	4.09	50	41.49	3.67	564	47.91	1.63			
Living with parents															
No (one/none)	428	33.86	1.15	37	39.17	6.51	50	36.13	5.20	499	34.51	1.07			
Yes (both)	841	66.14	1.15	64	60.83	6.51	93	63.87	5.20	960	65.49	1.07			
Current student															
No	225	20.72	0.98	18	18.58	4.75	20	16.64	4.12	214	17.57	1.34			
Yes	1044	79.28	0.98	83	81.42	4.75	123	83.36	4.12	1245	82.43	1.34			
Parents' education															
None/primary	333	26.67	0.98	31	30.80	3.58	41	28.11	3.54	362	25.01	0.89			
Secondary (7–9 years)	478	37.31	1.83	42	43.98	5.02	53	35.54	5.38	548	38.46	1.69			
High school (10–12 years)	284	22.32	1.14	19	17.09	3.03	26	19.02	3.61	359	23.67	1.38			
College (13+ years)	173	13.71	1.00	9	8.12	1.88	23	17.33	3.32	190	12.86	0.85			
Parents' income															
Low	459	35.58	1.95	43	44.77	4.36	50	35.41	3.51	545	37.60	1.46			
Average	400	31.42	1.51	38	36.79	4.35	45	29.89	4.34	440	30.20	1.37			
High	410	33.00	1.45	20	18.44	4.10	48	34.70	4.05	474	32.20	1.18			

%s are weighted by sample design and non-response

Table 2
Association of third party presence with psychiatric diagnosis in adolescent mental health interviews

Psychiatric disorder	Third party presence						df	χ ²	p	
	No one present (reference group)									
	OR	Children only		Children and adults		Adults only				
		OR	95 % CI	OR	95 % CI	OR	95 % CI			
I. Anxiety disorders										
Panic disorder	1.00	1.21	(0.32–4.52)	1.16	(0.39–3.39)	0.62	(0.40–0.95)	3	5.44	0.14
Generalized anxiety disorder	1.00	1.20	(0.16–8.94)	0.93	(0.08–10.41)	1.43	(0.53–3.86)	3	2.04	0.56
Agoraphobia	1.00	1.50	(0.64–3.50)	0.77	(0.28–2.16)	1.24	(0.84–1.83)	3	2.14	0.54
Social phobia	1.00	0.64	(0.31–1.32)	1.23	(0.60–2.53)	0.91	(0.68–1.20)	3	3.64	0.30
Specific phobia	1.00	1.18	(0.65–2.14)	1.20	(0.88–1.65)	1.02	(0.85–1.24)	3	1.42	0.70
Separation anxiety	1.00	0.98	(0.44–2.19)	1.19	(0.63–2.23)	0.97	(0.72–1.31)	3	0.52	0.92
Posttraumatic stress disorder	1.00	0.36	(0.04–2.93)	0.73	(0.22–2.44)	0.55	(0.35–0.86)	3	8.27	0.04
Any anxiety disorder	1.00	1.20	(0.69–2.09)	1.32	(0.96–1.82)	1.04	(0.88–1.22)	3	3.32	0.35
II. Mood disorders										
Major depressive disorder	1.00	0.99	(0.48–2.02)	0.66	(0.31–1.40)	0.78	(0.54–1.13)	3	4.46	0.22
Bipolar disorder (broad)	1.00	1.37	(0.80–2.33)	1.22	(0.39–3.84)	1.07	(0.70–1.64)	3	1.70	0.64
Any mood disorder	1.00	1.09	(0.60–1.98)	0.78	(0.44–1.40)	0.85	(0.64–1.12)	3	3.88	0.27
III. Disruptive behavior disorders										
Intermittent explosive disorder	1.00	1.16	(0.63–2.12)	2.35	(1.30–4.22)	1.05	(0.74–1.50)	3	8.96	0.03
Oppositional-defiant disorder	1.00	1.78	(0.94–3.39)	1.36	(0.64–2.87)	1.05	(0.82–1.36)	3	3.80	0.28
Conduct disorder	1.00	3.00	(1.17–7.65)	2.07	(0.81–5.24)	1.09	(0.60–1.99)	3	11.86	0.01
Attention-deficit/hyperactivity disorder	1.00	0.50	(0.06–4.12)	2.75	(0.85–8.84)	1.83	(1.08–3.10)	3	11.39	0.01
Any disruptive behavior disorder	1.00	1.74	(1.21–2.51)	1.80	(1.05–3.10)	1.16	(0.91–1.46)	3	19.53	0.00
IV. Substance use disorders										
Alcohol use disorder	1.00	0.66	(0.13–3.19)	1.40	(0.51–3.86)	1.08	(0.72–1.62)	3	0.99	0.80
Drug use disorder	1.00	0.90	(0.25–3.24)	0.74	(0.11–4.97)	0.17	(0.07–0.38)	3	21.24	0.00
Any substance use disorder	1.00	0.66	(0.21–2.10)	0.89	(0.34–2.33)	0.76	(0.54–1.06)	3	4.36	0.23
V. Any disorder	1.00	1.39	(0.82–2.34)	1.31	(0.94–1.82)	0.99	(0.84–1.17)	3	5.37	0.15

Regression models adjusted by sex and age

OR Odds ratio, 95 % CI 95 % confidence interval, italic shows significant ORs at $p < 0.05$

Psychiatric disorders (the dependent variable) and privacy levels (the independent variable) are displayed as such for visual ease

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Association of third party presence with substance use reports in adolescent mental health interviews

Table 3

	Alcohol opportunity		Alcohol use		Drug opportunity		Drug use	
	OR	95 % CI	OR	95 % CI	OR	95 % CI	OR	95 % CI
Adult(s) only present	0.94	(0.77–1.15)	0.91	(0.75–1.09)	0.90	(0.77–1.06)	0.47	(0.31–0.73)
Adult(s) and child(ren) present	1.09	(0.67–1.77)	1.01	(0.68–1.48)	1.41	(0.97–2.03)	0.70	(0.20–2.40)
Child(ren) only present	1.13	(0.69–1.85)	0.76	(0.45–1.30)	1.73	(1.10–2.70)	1.17	(0.53–2.62)
No one present	1.00		1.00				1.00	
	$\chi^2 = 1.05, p = 0.79$		$\chi^2 = 1.62, p = 0.66$		$\chi^2 = 14.16, p < 0.001$		$\chi^2 = 13.79, p < 0.001$	

Regression models adjusted for sex and age

OR Odds ratio; 95 % CI 95 % confidence interval, italic shows significant ORs at $p < 0.05$

Table 4

Association of third party presence with reports of suicidal behavior in adolescent mental health interviews

	Lifetime suicidal ideation		Lifetime suicidal plan		Lifetime suicidal attempt	
	OR	95 % CI	OR	95 % CI	OR	95 % CI
Adult(s) only present	0.66	(0.54–0.81)	0.55	(0.36–0.83)	0.48	(0.30–0.76)
Adult(s) and child(ren) present	0.49	(0.23–1.03)	0.60	(0.24–1.48)	0.47	(0.16–1.42)
Child(ren) only present	1.09	(0.63–1.86)	0.61	(0.22–1.68)	0.98	(0.42–2.26)
No one present	1.00		1.00		1.00	
	$\chi^2 = 34.14, p < 0.001$		$\chi^2 = 11.84, p < 0.01$		$\chi^2 = 12.55, p < 0.01$	

Regression models adjusted for sex and age

OR Odds ratio, 95 % CI 95 % confidence interval, italic shows significant ORs at $p < 0.05$

Association of third party presence with reports of childhood adversity in adolescent mental health interviews

Table 5

	Third party presence						df	χ^2	p		
	No one present (Reference group)			Children and adults							
	OR	95 % CI	OR	95 % CI	OR	95 % CI					
Parental mental illness	1.00		1.39	(0.82–2.37)	2.14	(1.34–3.41)	1.39	(1.13–1.71)	3	21.82	0.00
Parental substance problems	1.00		1.25	(0.56–2.76)	1.75	(0.83–3.67)	1.08	(0.76–1.53)	3	2.55	0.47
Parental criminal behavior	1.00		2.44	(1.31–4.56)	1.38	(0.64–2.98)	0.95	(0.68–1.33)	3	10.92	0.01
Witnessing family violence	1.00		1.10	(0.71–1.72)	1.05	(0.72–1.53)	0.75	(0.62–0.91)	3	12.23	0.01
Physical abuse	1.00		1.29	(0.78–2.13)	1.32	(0.84–2.07)	0.74	(0.59–0.91)	3	12.33	0.01
Sexual abuse	1.00		1.72	(0.69–4.26)	0.52	(0.14–1.94)	0.69	(0.38–1.27)	3	7.85	0.05
Neglect	1.00		2.23	(1.15–4.31)	0.49	(0.16–1.51)	0.98	(0.74–1.31)	3	14.44	0.00
Parent died	1.00		1.88	(1.05–3.35)	0.69	(0.24–1.96)	0.99	(0.62–1.60)	3	6.31	0.10
Parent divorce	1.00		0.82	(0.50–1.34)	0.93	(0.47–1.85)	0.90	(0.74–1.10)	3	1.37	0.71
Other parent loss	1.00		1.45	(0.74–2.82)	1.11	(0.73–1.70)	0.92	(0.75–1.13)	3	1.95	0.58
Physical illness	1.00		1.33	(0.68–2.58)	1.37	(0.71–2.62)	0.91	(0.63–1.33)	3	4.76	0.19
Economic adversity	1.00		1.24	(0.84–1.83)	1.04	(0.66–1.66)	1.22	(1.01–1.46)	3	6.62	0.09

Regression models adjusted by sex and age

OR Odds ratio, 95 % CI 95 % confidence interval, italic shows significant ORs at $p < 0.05$

Childhood adversity (the dependent variable) and privacy levels (the independent variable) are displayed as such for visual ease