Psychological Well-Being as a Predictor of Casual Sex Relationships and Experiences among Adolescents: A Short-Term Prospective Study

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Abstract

Psychological characteristics may predispose youths to engage in casual sex relationships and experiences (CSREs). Using a prospective longitudinal design and in a subsample of 2,601 high school students in the province of Québec, we explored possible shifts in engaging in one-night stands (ONSs) and friends with benefits (FWB) relationships over a six-month period among sexually active adolescents. We also examined the relationships among well-being predictors (psychological distress, self-esteem, suicidal ideation, and alcohol and drug consumption) and these shifts while exploring possible gender differences. Multinomial regressions in Mplus were used to explore whether initial psychological well-being was related to entrance type, the transition from having no CSREs to having one, or discontinuation or continuation type. Frequent alcohol consumption (i.e., once or twice a week or more) for boys and frequent consumption of both alcohol and drugs for girls were associated with continuation of CSREs. Suicidal ideation was associated with entrance into FWB relationships as well as continuation of FWB relationships and ONSs for girls. Psychological distress was a predictor of discontinuation of ONSs for boys. These results suggested that interventions should consider the specific and common needs of both genders in regard to ONSs and FWB relationships.

Keywords

adolescents; casual sex; psychological well-being; substance use

Introduction

Casual sex relationships and experiences (CSREs), sexual contacts that occur outside of a dating or romantic relationship, have been studied often among emerging adults (Rodrigue et al., 2015) but less among adolescents. However, many teenagers have experienced at least one CSRE (see Grello, Welsh, Harper, & Dickson, 2003; Manning, Giordano, & Longmore, 2006; Manning, Longmore, & Giordano, 2005). A comprehensive theoretical framework to guide research on CSREs during adolescence is not available, partially due to the complexity

of adolescent sexuality. While CSREs frequently are regarded as a cause or a result of compromised well-being in adolescents and young adults (Vrangalova, 2015a), empirical results are actually mixed for both populations. This current study examined one direction of influence of this association, psychological well-being as a predictor of engagement in CSREs, using a prospective longitudinal design in a subsample from a representative sample of adolescents. It also sought to fill gaps in the existing literature. First, it investigated correlates of CSREs relating to psychological well-being other than depression and depressive symptoms, which have been examined to the greatest extent in studies about adolescents' CSREs. It focused on five aspects of psychological well-being (i.e., psychological distress, suicidal ideation, self-esteem, frequent alcohol consumption, and frequent drug consumption).

Second, we distinguished two forms of CSREs: *one-night stands* (ONSs) and *friends with benefits* (FWB) relationships because they are reportedly the most common forms of CSREs (Claxton, DeLuca, & Van Dulmen, 2015). Most research on psychological well-being factors associated with CSREs has failed to distinguish among forms of CSREs. However, the link between psychological well-being and CSREs may actually depend on the differences in relational contexts (Furman & Collibee, 2014). ONS is defined as an unplanned sexual encounter between two people who are strangers or brief acquaintances and who do not plan to become a couple (Paul, McManus, & Hayes, 2000). FWB relationship is defined as sexual contacts that usually occur multiple times between two friends who are not involved in a romantic relationship (Guerrero & Mongeau, 2008).

Finally, this current study examined shifts in engagement in CSREs over time. It employed a framework based on a life course perspective that postulates that each life trajectory is punctuated by various transitions that may occur in different sequences (Carpenter, 2015). No study has explored whether psychological well-being predicts changes in engagement in CSREs (Furman & Collibee, 2014; Roberson, Olmstead, & Fincham, 2015). To date, the few prospective studies involving adolescents and emerging adults have examined psychological well-being predictors of CSRE entrance or the shift from no CSRE engagement to one (e.g., Deutsch & Slutske, 2015; Sandberg-Thoma & Kamp Dush, 2014). Thus, the present study investigated not only entrance type but also discontinuation and continuation type over a six-month period. By studying various shifts in engagement over a short period, we may identify patterns of associations with psychological well-being, which might not be possible when examining whether people have simply engaged in CSREs or not (Furman & Collibee, 2014). Such a study would also help to differentiate more effectively between youths whose CSREs are expressions of developmentally appropriate experiences, such as explorations of sexual behaviors, and those whose CSREs are expressions of impaired psychological well-being, such as depression or externalizing symptoms (e.g., excessive substance use) (Grello et al., 2003; Shulman, Walsh, Weisman, & Schelyer, 2009).

Psychological Well-Being and Casual Sex Relationships and Experiences

The current study examined depressive symptoms, suicidal ideation, self-esteem, frequent alcohol consumption and frequent drug consumption as potential predictors of CSREs among adolescents. Depressive symptoms have been associated with CSREs among

adolescents (Grello et al., 2003; Mendle, Ferrero, Moore, & Harde, 2013; Monahan & Lee, 2008). In one longitudinal study, Sandberg-Thoma and Kamp Dush (2014) reported that these symptoms increased the likelihood that 12- to 17-year-olds would engage in CSREs in emerging adulthood. However, in another longitudinal study, Deutsch and Slutske (2015), who used a genetically informed design to examine twins, indicated that there was no causal link between adolescent depressive symptoms and CSREs in emerging adulthood. In the short term, they found a modest association between depressive symptoms and more casual sex partners one year later among boys (Deutsch & Slutske, 2015).

Suicidal ideation is another important indicator of lower psychological well-being that reportedly increases the likelihood of CSREs, especially for girls (Sandberg-Thoma & Kamp Dush, 2014). However, in terms of depressive symptoms, Deutsch and Slutske (2015) showed that there was no causal link between adolescent suicidal ideation and CSREs in emerging adulthood. Divergent results on depressive symptoms and suicidal ideation may be due to differences in designs and participants' characteristics. However, while these longitudinal studies focused mostly on long-term associations, the present study examined short-term links, which may be more likely to exist, and took into account the type of partners (Deutsch & Slutske, 2015).

Lower self-esteem has been linked to choices of risky partners or sexual practices (Ethier et al., 2006), which could be explained by self-affirmation difficulties. Self-esteem has been investigated in association with CSREs only among young adults (Fielder & Carey, 2010; Fielder, Walsh, Carey, & Carey, 2013; Schmitt, 2005). Higher self-esteem has been reported as a predictor of fewer CSREs involving oral sex among young women (Fielder et al., 2013). Nevertheless, other studies have found no predictive role of self-esteem on CSREs among women or men (Fielder & Carey, 2010; Vrangalova, 2015a). Conclusions based on convergent findings are impossible to draw regarding whether higher or lower self-esteem is linked to a greater likelihood of engaging in CSREs among young adults and among adolescents, as there are no available prospective studies.

Alcohol-related sex with a non-romantic partner has been already documented (e.g., Bersamin, Paschall, Saltz, & Zamboanga, 2012; Cooper, 2002). However, alcohol or drug use may be a behavioral expression of a lower psychological well-being (Hallfors et al., 2004; Schulte & Hser, 2014). Moreover, alcohol consumption is one of the strongest predictors of CSREs among young adults (Claxton et al., 2015). In a cohort of adolescents, it was associated with more CSREs in emerging adulthood (Johnson, 2013; Johnson & Chen, 2014). However, few studies have considered drug consumption in association with these sexual relationships. One cross-sectional study reported that 15- to 25-year-old men and women who had used marijuana or cocaine at least once during the last year were more likely than nonusers to have had sexual contact with a casual partner during the same year (van Gelder, Reefhuis, Herron, Williams, & Roeleveld, 2011). A longitudinal survey showed that adolescents of both genders who often used or were addicted to alcohol and drugs, especially cannabis and amphetamines, had more sexual partners, including casual acquaintances, over the following six years (Tapert, Aarons, Sedlar, & Brown, 2001). In sum, findings on the predictive role of depressive symptoms, suicidal ideation, and self-esteem are inconclusive and remains to be clarified. Despite the findings supporting the

predictive role of alcohol and drug consumption, the current study contributed to the literature by examining the short-term influence of these factors on two specific forms of CSREs among adolescents.

Gender Differences

Gender may play a significant role in the association between psychological well-being and CSREs. According to data collected in the United States, more boys than girls are involved in CSREs (Manning et al., 2005; 2006). Gender differences in the association between depressive symptoms and CSREs (Bersamin et al., 2013; Grello, Welsh, & Harper, 2006; Owen, Rhoades, Stanley, & Fincham, 2010) as well as divergent conclusions regarding the extent to which self-esteem is linked to CSREs among young adults (Fielder & Carey, 2010; Fielder et al., 2013; Vrangalova, 2015a) and the absence of prospective studies on this association among adolescents emphasize the relevance of investigating the influence of gender on sexual behaviors. Our study also explored the influence of frequent alcohol and drug consumption as well as suicidal ideation because gender has not been examined so far (Johnson, 2013; Johnson & Chen, 2014; Sandberg-Thoma & Kamp Dush, 2014; Tapert et al., 2001).

Current Study

The objectives of this study were to: 1) provide prevalence data on three temporal shifts in engagement, entrance into CSREs, continuation of CSREs, and discontinuation of CSREs, in adolescence from a subsample of sexually active adolescents from a representative sample; 2) examine the prospective links between psychological well-being predictors (psychological distress, self-esteem, suicidal ideation, frequent consumption of alcohol, and frequent consumption of drugs) and the three temporal shifts in engagement in CSREs while considering two forms of CSREs; and 3) investigate the moderating role of gender on these associations.

The hypotheses were: 1) Psychological distress will increase the likelihood of engagement in FWB relationships/ONSs for both boys and girls. 2) Suicidal ideation will increase the likelihood of engagement in FWB relationships/ONSs for girls. 3) Frequent consumption of both alcohol and drugs will increase the likelihood of engagement in FWB relationships/ONSs for both girls and boys. Because no available research has been conducted on the topic, this study explored the predictive role of self-esteem on CSREs in adolescence. In addition, gender was examined as a moderator.

Method

Participants

Of the 6,540 participants in the weighted sample at Time 1 (T1), the analyses were based on adolescents who were sexually active, which was assessed at T1 or Time 2 (T2) using the following question: "How old were you when you engaged in consensual sexual relations with penetration (oral, vaginal or anal) for the 1st time?" A consensual sexual relation meant one that they wanted. Among those participants, we focused on adolescents who completed questions about CSREs at both T1 and T2 ($N = 2,601$). That is, because we examined shifts

in engagement between T1 and T2, only participants who reported having or not having had a CSRE at T1 and T2 were included. The proportions of boys and girls in the studied weighted subsample were similar (girls: 58.3%, 95% CI [51.9, 64.4], boys: 41.7%, 95% CI [35.6, 48.1], $p = .78$). On average, participants were 15.62 years old [$SE = .11$] at T1. Sociodemographic characteristics of the participants in the subsample are presented in Table 1.

Procedure

The study used the (blind for review), which included 8,194 adolescents (56.3% of whom were girls) aged 14 to 20 years at T1 and 6,472 adolescents (57.3% of whom were girls) at T2. All youths were in their third, fourth or fifth years of high school. The data were collected following one-stage stratified cluster sampling of 34 Quebec high schools. The schools were randomly selected from Quebec's Ministry of Education, Leisure and Sports (MELS) database of public and private schools. The final sample comprised 329 classes from 34 schools. To correct the biases associated with the non-proportionality of the schools sample compared to the target population, participants were given a sample weight defined as the inverse of the probability of selecting the given grade in the respondent's stratum in the sample multiplied by the probability of selecting the same grade in the same stratum in the population. The weighted sample included 6,540 youths at T1 and 4,447 youths at T2. It was found to be representative of Quebec French- and English-speaking students aged 14 to 18 years from the public education system only.

The class response rate and overall student response rate were determined as the ratio between the number of students who agreed to participate (students from whom consent was obtained) and the number of approached students, calculated per class and for the entire sample, respectively. The response rate was 100% of all students who were present in most of the classes (320/329 classes). For the remaining classes, the response rate ranged from 90% to 98%. The survey was finalized, with an overall response rate of 99% of students who agreed to participate. The retention rate between T1 and T2 was 71%. That is, 71% of the students who completed T1 also completed T2. The self-reported questionnaires were distributed in participating classrooms. A drawing for \$10 gift cards was used as an incentive in the schools. This research was approved by the research ethics board of (blind for review), which agreed that the research could be conducted with adolescents aged 14 years and older without parental consent, as long as consent was obtained from the adolescents themselves.

Measures

Casual sex relationships and experiences—The four items that measured CSREs at T1 were inspired by Manning et al. (2006). They measured the participants' consensual sexual contacts during the last 12 months for T1 and during the last six months for T2. The definition of ONS was "a sexual contact with an acquaintance or with a stranger" and that of FWB relationship was "a sexual contact with your best friend or a friend". The types of sexual contact (sexual touching, oral, vaginal, and/or anal penetration) and the frequencies of each (only once, more than once) were asked at both time points. The terms FWB, ONS, and casual sex were not used. Participants could report having more than one type of casual

partner and having more than one type of sexual contact. The ONSs and FWB relationships were distinguished here by the type of casual partner and not by the frequency of sexual contacts. Sexual contacts with nonromantic partners were distinguished from sexual contacts with romantic partners.

Two nominal outcome variables with four categories of engagement were created by the researchers (one for ONSs and the other for FWB relationships) using both time points. The reference group comprised adolescents who were sexually active, i.e., who already had sexual contacts but who did not have an FWB relationship (for the FWB dependent variable) or an ONS (for the ONS dependent variable) at T1 or at T2; this reference group was coded 0. Participants who did not engage in an FWB relationship (for the FWB dependent variable) or in an ONS (for the ONS dependent variable) at T1 but who did at T2 were coded as the “entrance” group (1), those who had engaged at T1 but not at T2 were the “discontinuation” group (2), and those who had engaged at both T1 and T2 were the “continuation” group (3).

Psychological distress—Psychological distress was measured at T1 using the 10-item *Psychological Distress Scale*, which has good internal consistency ($\alpha = .93$) (Kessler et al., 2002). The alpha coefficient for our sample was similar ($\alpha = .88$). Participants responded on a five-point scale, ranging from 1 (*None of the time*) to 5 (*All of the time*). The average score was used, with a higher score indicating higher distress. A logarithmic transformation was performed on the average scores because the distribution was not normal.

Self-esteem—The five items that measured self-esteem at T1 were inspired by the Marsh and O’Neill *Self-Description Questionnaire III* (SDQ-III) (1984), which has good internal consistency ($\alpha = .89$; for our sample: $\alpha = .88$). The five-point scale of response (from 1 = *false* to 5 = *true*) had no period of reference. A higher average score indicated higher self-esteem. For the same reason as for psychological distress, a logarithmic transformation was performed on the average scores.

Suicidal ideation—Lifetime suicidal ideation was measured at T1 by one item from the *National Longitudinal Survey of Children and Youth 2006–2007* (NLSCY) (Statistics Canada and Human Resources and Skills Development Canada, 2008), which was “Have you ever seriously thought of committing suicide?” The response scale was dichotomous (0 = *No*, 1 = *Yes*).

Frequent consumption of both alcohol and drugs—Three items at T1 assessed substance use. They were inspired by the DEP-ADO and were used in national surveys including the *Quebec Survey on Smoking, Alcohol, Drugs and Gambling in High School Students* (QSHSS) (Institut de la Statistique du Québec, 2008). They measured the frequency of alcohol, cannabis, and other drug use during the last 12 months. The response scale was 0 (*not at all*), 1 (*occasionally*), 2 (*about once a month*), 3 (*on weekends or once or twice a week*), 4 (*3 times a week or more, but not every day*), 5 (*every day*). A dichotomous variable for alcohol consumption was created, as was another for drug consumption including cannabis and other drugs. Low consumption was coded 0 (choices 0, 1, and 2), and frequent consumption was coded 1 (choices 3, 4 and 5), which is a dichotomization method that has been used in a number of national surveys (Institut de la Statistique du

Québec, 2008). Frequent, i.e., weekly, consumption is regarded as risky for developing into a substance dependence disorder (Grant et al., 2006).

Gender—Gender was coded as dichotomous (0 = *girls* and 1 = *boys*) and used as a moderator.

Control variables—We controlled for the youths' ages at T1, which was continuous, because some studies reported differences in the rates of engagement in CSREs and the levels of lower well-being symptoms according to age (Grello et al., 2003; Manning et al., 2005; Monahan & Lee, 2008). We also controlled for socioeconomic status as assessed by mother's and father's education level because they were correlated in our study with temporal shifts in engagement in CSREs (DV). Parent's level of education was dichotomous, coded 0 = *high school level or less* or 1 = *college or professional level or more*.

Analytic plan

To achieve objective 1, which was to provide prevalence data on three temporal shifts in engagement in ONSs and FWB relationships among sexually active adolescents, descriptive analyses were conducted. To achieve objective 2, we conducted multinomial regressions to examine the associations between psychological well-being predictors and the temporal shifts in engagement in the two forms of CSREs. We predicted the probability of engaging in ONSs and FWB relationships separately. We compared adolescents who had been involved in a CSRE and the reference group described above (i.e., sexually active adolescents who had not experienced a CSRE) according to shifts in engagement in CSREs over time. This comparison may help to distinguish specific predictors of CSREs and predictors related to sex in general or sex in romantic contexts (Fielder & Carey, 2010). The control variables were entered at the same step as the psychological well-being predictors in each regression model.

To investigate the potential moderating effect of gender, as described in objective 3, multigroup analysis was performed. The multigroup model, including multinomial regressions, was tested using Mplus 7.00 software (Muthén & Muthén, 1998–2012). The percentage of missing data for both the FWB and the ONS models, calculated using all model variables and counted among our studied subsample of sexually active youths who completed the CSRE items, was 5.4%. Among the five predictors at T1 (psychological distress, self-esteem, suicidal ideation, frequent alcohol consumption, and frequent drug consumption) and the two nominal outcome variables (FWB and ONS), 0.8% (for suicidal ideation and FWB) to 5.2% (for self-esteem) of the data were missing. No gender data were missing. Less than 5% of the data were missing in our studied subsample; therefore, biases and loss of power were both likely to be inconsequential (Graham, 2009). Furthermore, analysis of the missing data did not indicate the presence of a specific non-response pattern. Cases with missing data on a dependent variable at T1 and/or T2 were excluded. We did not impute any data on the dependent variables. Missing data on independent variables were handled using full information maximum likelihood (FIML), which took the approach of maximum likelihood to estimate the model parameters when considering all available raw

data (Wothke, 2000). All analyses took into account the characteristics of the sampling design (Muthén & Muthén, 1998–2012).

Results

Descriptive Statistics

Among the 2,601 youths in the weighted subsample who were sexually active, 26.2% reported having a CSRE at T1 and 34.0% did so at T2 without any distinction between FWB and ONS relationships. Among those who reported having a CSRE, more reported having an FWB relationship at T1 and T2 (22.2% and 28.6%, respectively) than an ONS (9.9% and 16.2%, respectively) (Table 2). More boys (32.3% FWB and 20.5% ONS) than girls (26.1% FWB and 13.4% ONS) reported having an FWB relationship and an ONS at T2 ($p < .05$ and $p < .01$, respectively).

With regard to shifts in engagement, similar proportions were found for the three shifts. Specifically, one-third of the sexually active adolescents had entered into an FWB relationship (FWB entrance group; i.e., they did not have an FWB relationship during the 12 months that preceded the survey [T1] but had one six months later [T2]). In addition, one-third of the sexually active adolescents had discontinued their engagement (FWB discontinuation group; i.e., they engaged in at least one FWB relationship at T1 but did not repeat the experience six months later). Finally, one-third of sexually active adolescents had continued their engagement (FWB continuation group; i.e., they engaged in at least one FWB relationship at T1 and engaged in a new one at T2 or had continued the one that had begun 12 months before T1). No gender differences were found in the three shifts in engagement in FWB.

More sexually active youths had entered into an ONS relationship over a six-month period (7.8%) than discontinued (4.5%) or continued (2.9%) their engagement in these CSREs. More girls than boys had discontinued their engagement in an ONS after T1 ($p < .01$), whereas more boys than girls had repeated such a CSRE at T2 ($p < .05$).

Multigroup Models

To determine whether the psychological well-being variables could predict the likelihood that adolescents would engage in CSREs, we used multinomial regressions. These regression models were tested separately for each form of CSREs (ONS, FWB). The comparison group included the sexually active adolescents who did not have CSREs. To test the moderating effect of gender, we adopted a multigroup strategy using Mplus. We compared the configural prediction model in which the parameters were freely estimated with a model in which the parameters were fixed to be equal for boys and girls (Byrne, 2012). The maximum likelihood estimation method using robust standard errors (MLR estimate) was employed.

The log likelihood tests of the difference between the configural model and the FWB and ONS constrained models were significant ($\chi^2(12) = 12.64, p = .01$; $\chi^2(12) = 23.46, p = .02$, respectively), indicating that gender moderated the relationship between the

psychological well-being variables and the temporal shifts in engagement in both forms of CSREs.

Regarding engagement in FWB relationships, the control variable of age was significantly associated with entrance and discontinuation types for girls and boys. Moreover, the control variable of father's education was significantly associated with entrance and discontinuation types for boys only and with continuation type for girls and boys (Table 3). Among girls, lifetime suicidal ideation was the only predictor of entering into such a relationship over the six-month period. Frequent consumption of both alcohol and drugs was a significant predictor of discontinuation. Frequent consumption of both alcohol and drugs as well as suicidal ideation were associated with an increased likelihood of continuing an FWB relationship during the six-month period. For boys, no psychological well-being variables were associated with entrance and discontinuation types. Frequent alcohol consumption significantly predicted continued engagement in an FWB relationship.

Regarding engagement in ONSs, the control variable of age was significantly associated with entrance type for girls and boys, whereas father's education was significantly associated with entrance type for girls only (Table 4). Among girls, frequent alcohol consumption was associated with an increased likelihood of discontinuation of ONSs, whereas frequent drug use was associated with an increased likelihood of continuing such a CSRE. As was the case in the FWB model, suicidal ideation was a significant predictor of continuation of ONSs over the six-month period. No psychological well-being variables were associated with entrance type for either girls or boys. Among boys, psychological distress was strongly associated with an increased likelihood of discontinuing engagement in ONSs. That is, boys with psychological distress were more likely not to engage in another ONS during the six months following their last engagement. Similar to the FWB model, boys who frequently used alcohol were more likely to continue their engagement in ONSs six months after T1.

Discussion

Our study aimed to examine psychological well-being predictors of FWB relationships and ONSs. It provided prevalence data on three temporal shifts in engagement in CSREs in adolescence from a subsample of sexually active adolescents from a representative sample of high school students. The study also investigated the prospective links among psychological well-being predictors and shifts in engagement over a six-month period while distinguishing between predictors of FWB relationships and ONSs. It also analyzed the moderating role of gender on these associations.

The results showed that 3 out of 10 sexually active youths had engaged in a CSRE over an 18-month (12 months prior to T1 and 6 months prior to T2) period. The study by Manning et al. (2005), which included a representative sample of 12- to 18-year-olds and an 18-month temporal window, found a similar percentage of 37.7%. Moreover, as with the cross-sectional study of Manning et al. (2006), who distinguished among forms of CSREs, our findings confirmed that sexually active adolescents engaged more in FWB relationships than ONSs. Higher engagement in FWB relationships than in ONSs was shown across the three

shifts in engagement for both boys and girls. It could be that familiarity with a friend or a best friend reassures adolescents of the respect for their limits and competencies. In terms of gender, more girls than boys discontinued their engagement in ONSs, whereas more boys than girls continued their engagement in ONSs over the 18 months. These findings could support the idea that girls derive less satisfaction from these sexual experiences than boys (e.g., Armstrong, England, & Forgaty, 2012).

The first major finding of this study was that psychological distress was strongly associated with discontinuation of ONSs only during the six-month period for boys only. This result contradicted our first hypothesis, which was that psychological distress would be associated with a higher likelihood of engaging in CSREs for both genders. Adolescent boys who report lower well-being appear to have an engagement that is punctual or restrained to a short period of time, considering the timeframe of our research. An explanation of this link between psychological distress and discontinuation of ONSs is offered by Barber and Cooper (2014), who stated that these boys may engage in an ONS after a romantic breakup to cope with distress or to make their ex jealous (“revenge sex”). Indeed, they may engage once in an ONS to relieve their psychological distress as a coping mechanism, as speculated by Owen, Fincham, and Moore (2011). Because of their lower psychological well-being, boys may also lose interest in having CSREs (Fielder et al., 2013) or lack the relational skills, energy, or self-confidence to engage in a new ONS.

The second major finding is that lifetime suicidal ideation was associated with CSREs only for girls, which supported our second hypothesis. Lifetime suicidal ideation was associated with entrance into FWB relationships as well as continued engagement in both ONSs and FWB relationships only for girls. A stronger association between suicidal ideation and CSREs for girls than for boys has been documented by Sandberg-Thoma and Kamp Dush (2014), but they measured suicidal ideation during the previous 12 months. Our study added to the existing literature by making the distinction between two forms of CSREs and considering shifts in engagement over six months. Moreover, it emphasized the distinction between the constructs of suicidal ideation and psychological distress. In this sense, our preliminary analysis supported the practice of analyzing suicidal ideation and psychological distress separately, given that they were not highly correlated. Girls who have had suicidal ideation in their lifetime could have been more socially isolated from their peers (Bearman & Moody, 2004) and might engage in CSREs to build connections with others (Fielder et al., 2014; Owen et al. 2011). Girls may maintain ONSs to cope with their history of suicidal ideation. ONSs may temporarily boost their mood as well as help them to feel more desirable and to enjoy sexual pleasure while not demanding the investment in a romantic relationship. They may also engage in and maintain FWB relationships believing that having sexual contacts with a friend or a best friend involves more trust, security, and intimacy. However, their interpretation could be false or naïve, as it has been shown that FWB relationships, at least in young adults, are more focused on sexual contacts and less on sharing nonsexual activities and intimacy than relationships with friends and thus may not be satisfying (Furman & Collibee, 2014).

The third major finding is that girls who engaged in CSREs reported frequent use of both alcohol and different drugs, whereas boys who engaged in CSREs frequently used alcohol

only. These results supported our third hypothesis, which was that frequent use of alcohol or drugs, defined as consumption of at least once per week, was associated with a higher likelihood of engaging in CSREs for both genders. We also found that associations with shifts in engagement differed according to gender.

Girls who discontinued their engagement in FWB relationships reported previous frequent consumption of both alcohol and drugs. For those girls, these substances may facilitate sexual contacts between friends, although the focus on the sexual component may ruin their friendships (Owen, Fincham, & Manthos, 2013). Girls who discontinued their engagement in ONSs reported frequent alcohol consumption. They may have engaged in an alcohol-induced ONS, then decided not to engage in another one because of shame and self-blame (Paul & Hayes, 2002). Regarding discontinuation of both FWB relationships and ONSs, if alcohol or drugs influenced their decision to engage in such CSREs, girls may realize afterward that their decision was inconsistent with their values or that their partner did not want the same thing that they did (Oswalt, Cameron, & Koob, 2005; Townsend & Wasserman, 2011).

Girls who continued their engagement in FWB relationships also reported previous frequent consumption of both alcohol and drugs. Girls who continued their engagement in ONSs regularly consumed drugs only. Girls who continued their engagement in FWB relationships or in ONSs may try to relieve their negative affect by frequently using alcohol and drugs as well as continuing to engage in sexual contacts with different nonromantic partners. They may also rely on substances to facilitate CSREs (Owen et al., 2011). Because of the “double standard”, girls may think that it is more acceptable to be sexually promiscuous while intoxicated, placing the responsibility for their sexual decisions on consumption, thereby reducing the risk of negative appraisals from peers (Beres & Farvid, 2010). In particular, girls who are involved in frequent drug use and who continue to engage in ONSs may have a tendency toward impulsiveness or a deficit in self-regulation (Winters, Botzet, Fahnhorst, Baumel, & Lee, 2009), which may lead them to frequently use substances and engage in sexual contacts with multiple unknown partners (Claxton et al., 2015).

For boys, only weekly alcohol use was associated with continued engagement in FWB relationships and ONSs. Social motivations, such as improving their reputations or increasing their popularity (Claxton & van Dulmen, 2013), as well as a desire for fun and excitement may contribute to their frequent alcohol use and greater involvement in CSREs (Uecker, Pearce, & Andercheck, 2015). Alcohol use may help them to feel more social and may provide them with enough courage to approach girls. Given that alcohol use has been found to be related to depression and suicidality in adolescents (Hallfors et al., 2004; Schulte & Hser, 2014), weekly alcohol consumption among boys may be an externalized symptom of lower psychological well-being. Because conduct disorder for boys and substance abuse increase by middle adolescence (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003), assessing different behavioral problems, such as violence against others, delinquency, truancy, or impulsivity and/or risk taking, would help to determine whether involvement in multiple CSREs, especially ONSs, and frequent alcohol consumption are part of a constellation of psychosocial and behavioral problems (Claxton et al., 2015; Grello et al., 2003; Fortunato, Young, Boyd, & Fons, 2010).

Finally, regarding the exploration of self-esteem in association with shifts in engagement, we found no link for boys or girls. Among young adults, a similar result of no association between self-esteem and engagement in CSREs was found over a few months (Fielder & Carey, 2010; Vrangalova, 2015a). The relationship between self-esteem and sexual behaviors among adolescents, including the initiation of sexual intercourse as well as CSREs, appears to be complex. The inconclusive results may be explained by the fact that self-esteem may be too prone to fluctuation by socially established standards and social interactions (Goodson, Buhi, & Dunsmore, 2006), which change a great deal, especially in adolescence.

Limitations and Future Research

There are some limitations to this research. Although a timeframe of six months is sufficient for reflecting possible changes in CSREs during adolescence, future research should involve longer periods of time and more measurement waves to confirm our findings regarding the influence of psychological well-being. To better understand the shifts in engagement, the number of casual sex contacts or partners that youths have during the assessment period should be taken into account to examine the intensity of engagement. Further, qualitative research should investigate in which personal or relational contexts CSREs occur to understand the link between lower psychological well-being and engagement in CSREs more fully. Clarification of the type of partners in ONSs would be a useful addition, as relations with a stranger, someone encountered on the Internet, or an acquaintance as well as relations involving retribution for sex all present different challenges. Future research should consider assessing suicidal ideation during the same window as CSRE measurement and adding nationality and ethnic identification as variables.

Generally, examining subsequent psychological well-being after engaging in CSREs, while controlling for prior well-being, would help to better clarify the causal direction of the relationship. It would also help to show if these sexual relationships are detrimental for teens' development or if they are either symptoms of psychosocial difficulties that are already present in adolescents (e.g., Costello et al., 2003) or a coping strategy. Future research should also distinguish between sexual behaviors by comparing penetrative and non-penetrative sex among adolescents (Sandberg-Thoma & Kamp Dush, 2014; Vrangalova, 2015a). Understanding of why and how suicidal ideation is a predictor of CSREs for girls, whereas psychological distress is not, could be promoted by examining other factors related to suicidal ideation, such as psychache, which is defined as psychological pain, and hopelessness, both of which are more important than depression in the explanation of suicidal ideation (Troister & Holden, 2010) as well as social isolation (Bearman & Moody, 2004). Future research could also investigate the influence of a history of sexual abuse in the association between suicidal ideation and engagement in CSREs, as such a history has been linked to greater likelihood of suicidal ideation (Bearman & Moody, 2004) and engagement in CSREs (Testa, Hoffman, & Livingston, 2010). A measure of sexual self-esteem could be more appropriate than a general measure of self-esteem in a study on CSREs (Fielder & Carey, 2010).

This research has many strengths, including a representative sample of adolescents aged 14 to 18 years from the public education system in the province of Quebec. Most studies on CSREs are cross-sectional, whereas ours used a prospective design with two time points, which helps to better understand the direction of influence. Additionally, like Manning et al. (2006), our study is one of the few to have investigated CSREs in an adolescent population and distinguished between two forms of CSREs: FWB relationships and ONSs. The inclusion of a variety of psychological variables is another strength, as psychological well-being has often been measured solely by depressive symptoms in association with CSREs among adolescents.

Our results offer several implications for practice. It appears judicious for youth workers to think about the role of teens' mental health on the occurrence of these relationships. As adolescence is a period marked by several changes in psychological well-being (Costello et al., 2003), CSREs may be a coping strategy for teens with lower psychological well-being, even though they may sometimes further decrease well-being. As in dating relationships, some adolescents may face break-ups or rejection, such as in the discontinuation of CSREs, which could worsen their state of mind. In such cases, youth workers should offer support. They should also encourage adolescents to clarify their expectations about CSREs and under what conditions they could become a positive experience. Vrangalova (2015b) showed that having motivations that are not considered to be egosyntonic, such as social or internalized social pressure, was linked to worse psychological outcomes of genital CSREs. Some gender issues should be considered. Girls who are experiencing suicidal thoughts and alcohol and drug problems should be invited to discuss their choices of intimate relationships and means of finding emotional solace or social contact (Bearman & Moody, 2004). However, for many adolescents, CSREs can present opportunities for positive explorations of sexuality that are not motivated by personal problems and do not have negative consequences. However, such relations should be described as not necessarily normative. In addition, clarification of expectations is recommended to all adolescents.

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Table 1

Sociodemographic characteristics of the subsample (weighted N = 2601)

Sample characteristics	% 95% CI
Gender	
Girls	58.3 [51.9, 64.4]
Boys	41.7 [35.6, 48.1]
Age groups	
14 years old	13.4 [8.0, 21.7]
15 years old	31.2 [24.3, 38.9]
16 years old	37.7 [31.8, 44.0]
17 years old	15.2 [10.9, 20.9]
18–20 years old	2.5 [1.3, 4.8]
Spoken language	
French	92.1 [88.2, 94.8]
English	3.6 [2.9, 4.3]
Other	4.3 [2.1, 8.5]
Sexual orientation	
Heterosexual ^a	83.5 [81.7, 85.1]
Gay/Lesbian ^b	1.9 [1.5, 2.5]
Bisexual ^c	12.6 [11.1, 14.3]
Questioning ^d	1.9 [1.5, 2.4]
Family structure	
Two parents under the same household	55.9 [52.9, 58.9]
Shared custody	14.2 [12.5, 16.1]
Living with their mother	20.1 [17.8, 22.6]
Living with their father	6.3 [5.3, 7.6]
Other family structure	3.5 [2.6, 4.7]
Nationality	
Born in Canada from Canadian parents	80.4 [70.9, 87.3]
Born in Canada from parents of another nationality	11.8 [8.1, 16.9]
Born in another country	7.8 [4.4, 13.6]
Parents' ethnic or cultural group	
Québécois or Canadian	84.2 [74.2, 90.8]
Latino-American or African-American	5.0 [2.5, 9.7]
European	3.6 [2.8, 4.7]
North African (Maghreb)/middle Eastern	2.2 [1.0, 5.0]
Asian	1.4 [0.9, 2.2]
Other	3.6 [1.8, 7.0]
Parents' education	
Mother	
Elementary degree	4.7 [3.8, 5.7]

Sample characteristics	% 95% CI
Completed high school degree	28.7 [25.6, 32.1]
Completed collegial or professional degree ^e	37.7 [35.1, 40.5]
Completed university degree	28.7 [24.5, 33.2]
Other	0.2 [0.1, 0.7]
Father	
Elementary degree	8.1 [6.7, 9.7]
Completed high school degree	33.8 [30.3, 37.5]
Completed collegial or professional degree ^e	31.9 [29.5, 34.3]
Completed university degree	25.9 [21.4, 31.1]
Other	0.3 [0.1, 0.6]

^a Sexually attracted only by persons of the other sex

^b Attracted only by same-sex partners

^c Attracted by both, or not exclusively attracted by either sex

^d Not sure or not knowing yet, or by no one

^e A collegial degree is usually undertaken around 18 years old and not in a university setting

Table 2Percentage of sexually active adolescents who engaged in CSREs by gender (weighted $N = 2601$)

	Total % [95% CI]	Girls % [95% CI]	Boys % [95% CI]	$\chi^2(1)$
Forms of CSREs at both time points				
FWB T1	22.2 [19.5, 25.2]	20.4 [17.7, 23.5]	24.6 [20.3, 29.5]	10.29
ONS T1	9.9 [8.7, 11.4]	9.2 [8.0, 10.5]	11.0 [8.7, 13.7]	3.42
FWB T2	28.6 [25.0, 32.5]	26.1 [22.7, 29.9]	32.3 [26.6, 38.5]	11.23 *
ONS T2	16.2 [13.9, 18.9]	13.4 [11.0, 16.1]	20.5 [16.3, 25.4]	22.57 **
Shifts in engagement in CSREs				
FWB transition	9.0 [7.3, 11.0]	8.7 [6.9, 10.9]	9.4 [7.3, 12.0]	0.51
FWB discontinuation	9.1 [7.3, 11.2]	9.8 [7.8, 12.3]	8.1 [6.3, 10.4]	2.85
FWB continuation	9.1 [7.0, 11.8]	8.3 [6.3, 10.9]	10.1 [7.5, 13.6]	3.16
ONS transition	7.8 [6.0, 10.0]	6.9 [5.1, 9.3]	9.0 [6.6, 12.1]	5.03
ONS discontinuation	4.5 [3.6, 5.6]	5.3 [4.2, 6.7]	3.4 [2.5, 4.7]	6.74 **
ONS continuation	2.9 [2.0, 4.1]	2.3 [1.6, 3.2]	3.7 [2.5, 5.7]	6.28 *

Chi-squared tests were calculated within each form of CSREs and shifts in engagement in CSREs to indicate gender difference

*
p<.05;**
p<.01

Table 3

Multinomial regression predicting short-term shifts in engagement in FWB relationships by well-being variables according to gender

	Girls				Boys			
	<i>B</i>	<i>SE</i>	<i>OR</i>	95% <i>CI</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	95% <i>CI</i>
Entrance versus no FwB								
Age	−0.32	0.11	0.72 [*]	[0.58, 0.91]	−0.36	0.12	0.70 ^{**}	[0.55, 0.88]
Father's education	0.31	0.18	1.37	[0.95, 1.96]	0.61	0.14	1.84 ^{***}	[1.40, 2.42]
Mother's education	0.12	0.22	1.12	[0.73, 1.73]	−0.20	0.20	0.82	[0.55, 1.21]
Psychological distress	0.04	0.79	1.04	[0.22, 4.89]	0.43	0.74	1.54	[0.36, 6.61]
Self-esteem	−0.61	0.57	0.55	[0.18, 1.67]	0.61	0.54	1.84	[0.64, 5.25]
Suicidal ideation	0.29	0.13	1.34 [*]	[1.03, 1.74]	0.003	0.28	1.00	[0.59, 1.72]
Alcohol	0.15	0.30	1.16	[0.64, 2.09]	−0.24	0.18	0.79	[0.56, 1.11]
Drugs	0.12	0.21	1.13	[0.75, 1.71]	−0.35	0.27	0.71	[0.41, 1.20]
Discontinuation versus no FWB								
Age	−0.26	0.12	0.77 [*]	[0.62, 0.97]	−0.29	0.11	0.75 ^{**}	[0.60, 0.93]
Father's education	0.34	0.21	1.41	[0.94, 2.10]	0.41	0.14	1.50 ^{**}	[1.13, 1.99]
Mother's education	0.36	0.20	1.44	[0.97, 2.12]	0.30	0.20	1.35	[0.92, 1.99]
Psychological distress	1.13	0.67	3.11	[0.84, 11.43]	1.04	0.14	2.82	[0.83, 9.65]
Self-esteem	0.36	0.62	1.43	[0.43, 4.78]	0.94	0.73	2.56	[0.61, 10.74]
Suicidal ideation	0.15	0.19	1.16	[0.79, 1.69]	−0.04	0.20	0.96	[0.65, 1.44]
Alcohol	0.41	0.18	1.51 [*]	[1.06, 2.14]	−0.001	0.23	1.00	[0.64, 1.56]
Drugs	0.50	0.25	1.65 [*]	[1.01, 2.68]	0.01	0.21	1.01	[0.67, 1.53]
Continuation versus no FWB								
Age	−0.12	0.17	0.89	[0.64, 1.23]	−0.24	0.15	0.79	[0.59, 1.05]
Father's education	0.57	0.23	1.77 [*]	[1.14, 2.76]	0.41	0.21	1.51 [*]	[1.01, 2.27]
Mother's education	−0.10	0.25	0.90	[0.55, 1.48]	0.002	0.22	1.00	[0.65, 1.55]
Psychological distress	0.78	0.59	2.18	[0.69, 6.91]	0.13	0.55	1.14	[0.39, 3.34]
Self-esteem	−0.65	0.44	0.52	[0.22, 1.24]	0.70	0.52	2.01	[0.72, 5.63]
Suicidal ideation	0.51	0.20	1.66 [*]	[1.13, 2.45]	−0.07	0.18	0.93	[0.66, 1.33]
Alcohol	0.71	0.26	2.03 [*]	[1.23, 3.35]	0.43	0.18	1.53 [*]	[1.08, 2.17]
Drugs	0.56	0.26	1.76 [*]	[1.05, 2.94]	−0.31	0.22	0.73	[0.47, 1.14]

Mother's and father's education: 0 = high school degree or less, 1 = collegial or professional degree or more. Psychological distress: logarithmic transformation on the average scores for psychological distress. Self-esteem: logarithmic transformation on the average scores for self-esteem. Suicidal ideation, alcohol, and drugs are dichotomous (0 = low consumption, 1 = frequent consumption). No FWB is the reference group with youths who already had sexual contact but not with an FWB partner

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p<.05;

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p<.01;

p<.001

Table 4

Multinomial regression predicting short-term shifts in engagement in ONSs by well-being variables according to gender

	Girls				Boys			
	<i>B</i>	<i>SE</i>	<i>OR</i>	95% <i>CI</i>	<i>B</i>	<i>SE</i>	<i>OR</i>	95% <i>CI</i>
Entrance versus no ONS								
Age	−0.26	0.13	0.77 [*]	[0.60, 1.00]	−0.51	0.13	0.60 ^{***}	[0.47, 0.77]
Father's education	0.43	0.22	1.54 [*]	[1.01, 2.35]	0.23	0.32	1.25	[0.67, 2.35]
Mother's education	−0.15	0.37	0.86	[0.42, 1.77]	−0.26	0.30	0.77	[0.43, 1.39]
Psychological distress	1.18	0.62	3.25	[0.97, 10.97]	−0.56	0.74	0.57	[0.13, 2.43]
Self-esteem	0.84	0.67	2.31	[0.62, 8.66]	0.15	0.69	1.16	[0.30, 4.49]
Suicidal ideation	0.43	0.22	1.54	[1.00, 2.37]	0.001	0.21	1.001	[0.69, 1.50]
Alcohol	0.35	0.27	1.42	[0.83, 2.42]	0.13	0.21	1.14	[0.76, 1.73]
Drugs	0.09	0.34	1.09	[0.56, 2.14]	0.10	0.33	1.11	[0.58, 2.10]
Discontinuation versus no ONS								
Age	−0.19	0.13	0.83	[0.65, 1.07]	−0.001	0.18	1.00	[0.70, 1.42]
Father's education	0.41	0.30	1.51	[0.84, 2.70]	0.03	0.38	1.04	[0.49, 2.19]
Mother's education	0.16	0.28	1.18	[0.67, 2.05]	0.19	0.36	1.21	[0.60, 2.46]
Psychological distress	0.67	0.88	1.95	[0.35, 10.93]	2.65	0.75	14.11 ^{***}	[3.25, 61.32]
Self-esteem	−0.59	0.71	0.55	[0.14, 2.24]	0.47	0.82	1.60	[0.32, 7.98]
Suicidal ideation	0.28	0.26	1.33	[0.80, 2.19]	−0.52	0.27	0.59	[0.38, 1.02]
Alcohol	0.57	0.27	1.77 [*]	[1.04, 3.00]	0.18	0.30	1.20	[0.67, 2.15]
Drugs	0.51	0.28	1.66	[0.96, 2.87]	0.21	0.48	1.24	[0.49, 3.14]
Continuation versus no ONS								
Age	0.007	0.22	1.01	[0.65, 1.46]	−0.07	0.19	0.93	[0.64, 1.35]
Father's education	0.29	0.30	1.34	[0.75, 2.41]	0.09	0.40	1.09	[0.50, 2.38]
Mother's education	0.55	0.37	1.73	[0.84, 3.57]	−0.46	0.27	0.64	[0.37, 1.08]
Psychological distress	1.70	1.07	5.47	[0.68, 44.30]	−0.36	0.98	0.70	[0.10, 4.78]
Self-esteem	1.53	1.16	4.63	[0.48, 44.80]	0.64	0.63	1.89	[0.55, 6.50]
Suicidal ideation	0.85	0.41	2.33 [*]	[1.05, 5.21]	0.07	0.31	1.07	[0.58, 1.97]
Alcohol	0.20	0.43	1.23	[0.53, 2.86]	0.80	0.25	2.23 ^{**}	[1.37, 3.63]
Drugs	0.97	0.35	2.64 ^{**}	[1.33, 5.23]	0.14	0.38	1.15	[0.54, 2.44]

Mother's and father's education: 0 = high school degree or less, 1 = collegial or professional degree or more. Psychological distress: logarithmic transformation on the average scores for psychological distress. Self-esteem: logarithmic transformation on the average scores for self-esteem. Suicidal ideation, alcohol, and drugs are dichotomous (0 = low consumption, 1 = frequent consumption). No ONS is the reference group with youths who already had sexual contact but not with an ONS partner

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