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Master Youth Studies

MASTER THESIS

Does perceived popularity longitudinally predict sexual behavior in
adolescent boys and girls?

Student: Jorien Zuur
Student number: 3174638
Supervisor: Geertjan Overbeek
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Universiteit Utrecht

Abstract

In this study longitudinal associations were examined between perceived popularity and sexual behaviour in adolescents. Specifically, I investigated whether popular adolescents reported more sexual behaviour over time. In addition, examined was if popular perceived boys report more sexual behaviour than popular perceived girls. Two waves of data were analyzed from 310 adolescents, ages 14-18, from nine different schools. Longitudinal hierarchical regression analysis showed a significant positive association between perceived popularity at wave 1 and subsequent sexual behaviour at wave 2. This means that more popular adolescents reported more sexual behavior after six months. No moderation effect of gender was found. Furthermore, reverse effects from sexual behavior at wave 1 to perceived popularity at wave 2 were examined, but here no significant association was found.

Samenvatting

In deze studie werden longitudinale associaties onderzocht tussen waargenomen populariteit en seksueel gedrag bij adolescenten. Specifiek heb ik onderzocht of populaire adolescenten meer seksueel gedrag over tijd rapporteren. Daarnaast is onderzocht of waargenomen populaire jongens meer seksueel gedrag rapporteren dan waargenomen populaire meisjes. Data van 310 adolescenten, van 14-18 jaar, vanuit negen verschillende scholen, zijn over twee meetmomenten geanalyseerd. Longitudinale hiërarchische regressie analyse liet significante positieve associaties zien tussen waargenomen populariteit op tijdstip 1 en seksueel gedrag op tijdstip 2. Dit betekent dat meer populaire adolescenten meer seksueel gedrag rapporteren na zes maanden. Geen moderatie effect voor geslacht werd gevonden. Bovendien werden omgekeerde effecten van seksueel gedrag op tijdstip 1 op waargenomen populariteit op tijdstip 2 onderzocht, maar hier werd geen significante associatie gevonden.

Introduction

A primary developmental task in adolescence is becoming a member of a peer group (Santor, Messervey, & Kusumakar, 2000). In addition, Brown and Lohr (1987) found that being part of a peer group helps the adolescent in developing an identity and a self-image. Nevertheless, peer popularity -although the importance of peer influences are known- is a factor that has not gotten much attention (Ali & Dwyer, 2011; Busse, Fishbein, Bleakley, & Hennessy, 2010). This triggers the question whether adolescents' social development, in terms of popularity, is associated with the development of sexual behavior. Sexual behavior and sexual experience are two terms, which are often used interchangeably. In this article I choose to use sexual behavior as an overarching concept. The fact that popularity is not researched frequently in adolescent development is surprising. More knowledge about how popularity influences sexual behavior in adolescents can be helpful in developing effective interventions. Next to that, as far as research did focus on correlations between popularity and sexual behavior, most of the studies employed a cross-sectional design (La Greca, Prinstein, & Fetter, 2001; Newcomer, Udry, & Cameron, 1983; Prinstein, Meade, & Cohen, 2003). Not much research has been done longitudinally, which is remarkable when one realizes that sexual behavior strongly develops in adolescence.

Moffitt (1993) came up with the concept of 'maturity gap'. She explains that the social maturity of youth in today's society is reached at a higher age than before, even though youth still have reached biological maturity (i.e., the extent to which the human body has developed and is ready for reproduction). Today's society delays social maturation with the positive aspects of adulthood where independency and autonomy is established, while adolescents are already physically developed. These adolescents are thus trapped in the 'maturity gap', which makes them frustrated and leads to showing particular behavior to overcome this 'gap'. Moffitt (1993) notices that most adolescents are likely to be engaged in adult-like behaviors

as smoking, drinking and having sex to try to behave as an adult and overcome the maturity gap. Moffitt (1993) states that the more successful ones, in this context the popular adolescents, function as a model for their peers who will mimic this behavior. Jessor (1991) also emphasized this idea and stated that smoking, drinking, illicit drug use, risky driving, or early sexual activity can be instrumental in gaining peer acceptance and respect in establishing autonomy from parents, or in affirming maturity, and marking a transition out of childhood and toward a more adult status.

Popularity and Sexual Behavior

Measuring popularity is challenging. Popularity and likeability are two intertwined terms and are often used interchangeably. Where likeability refers to the extent to which one is perceived as being cooperative and friendly, a popular adolescent is referred to as one who has prestige and influence in a group (Van der Linden, Scholte, Cillessen, Te Nijenhuis, & Segers, 2010). Popularity consists of different elements. Closson (2009) found that boys used terms as being cool, athletic, funny, and defiant as elements of popularity, whereas girls more often used terms as wearing nice clothes, being attractive, mean, snobby, rude, and sociable. Cillessen and Rose (2005) examined the concepts sociometric popularity (how well liked or rejected youths are by others) and perceived popularity (being referred to as popular). In the present study I will use the perceived popularity concept simply quantified by asking adolescents whom they find most popular in their class.

Is popularity associated with the development of sexual behavior? A study of 77 boys focused on the relation between peer relationships in 6th grade and number of sexual partners in 10th grade. Results indicated that popular boys in elementary school were more likely to date extensively during adolescence. Also, they were more likely to drink alcohol at parties. Dating and alcohol, in turn, offers greater opportunities for sexual intercourse with multiple partners (Feldman, Rosenthal, Brown, & Canning, 1995). In addition, a previous cross-

sectional study showed that populars were more likely to drink alcohol than non-populars, which in turn makes them more disposed to have sexual intercourse (Mosbach & Leventhal, 1988). In another cross-sectional study 250 high-school students were interviewed to examine linkages of peer crowd affiliation with health-risk behaviors and close friendships. Results indicated that popular adolescents more often had casual sex (i.e., sex with someone they did not know very well) or had a relationship. Interesting results were found about non-popular adolescents: the burnouts and nonconformists. Surprisingly, they were more sexual active than populars or others. In particular, they reported more unsafe sex (La Greca et al., 2001). Finally, a cross-sectional study on 212 10th graders concluded that adolescents who reported sexual activity had high levels of reputation-based popularity, where the latter was assessed with questions as “who is most popular” and “who is least popular”. However, sex with multiple partners was linked to lower levels of popularity (Prinstein et al., 2003).

Only two researches until now have longitudinally examined if being popular is related to sexual behavior in adolescents. Results indicated that popularity was a predictive factor of increased sexual activity respectively 18 and 24 months later (Prinstein, Choukas-Bradley, Helms, Brechwald, & Rancourt, 2011; Mayeux, Sandstrom, & Cillessen, 2008). Present study investigates this association over six months, which gives us a better view on how the association develops. Where Mayeux et al. (2008) didn't find any differences in this association for boys and girls, Prinstein et al. (2011) found that the association was only significant for boys.

A Moderating Role of Gender

Another thing to keep in mind is a possible gender difference in adolescents' perceptions about being popular in relation to sexual behavior. A lot has been written about the double standard, which states that premarital sex is acceptable for men, but not for women (Hynie & Lydon, 1995). However, contradicting evidence has been found regarding the

effects of this double standard. For example, Williams and Jacoby (1989) found that women showed a stronger preference for virginity in partners than did men. But findings from another experiment with 233 male and 320 female students showed that female targets were rated less favorable when they had an early first coitus, while for male's age of first coitus made no difference (Sprecher, McKinney, & Orbuch, 1987). These findings suggest that a double standard still exists, and that perceptions about popularity in relation to sexual behavior indeed differ between boys and girls. More recent findings suggest that the double standard may not operate in overall evaluations of persons, but in specific domains (Marks & Fraley, 2005). Ceyka and Eagly (1999) stated that domains associated with sexual stereotypes, for example power or dominance, may be more sensitive to the double standard than those that are not, for example peer popularity. Given current contradicting results, I will explore whether gender moderates the link between popularity and sexual behavior.

The Present Study

In the present study I will investigate a two-wave longitudinal association between perceived popularity and sexual behavior among adolescents. In addition, I will examine whether gender moderates this relation between perceived popularity among peers and sexual behavior. Specifically, with regard to the first research question I hypothesize that a higher extent of perceived popularity is linked with more sexual behavior. With regard to the second research question, I hypothesize that the association is stronger for boys, meaning popular boys are more sexual experienced compared to popular girls.

Methods

Participants and Procedure

Data were collected from seven high schools in The Netherlands. All schools received an invitation letter to take part in a longitudinal survey on the development of intimate relationships and sexuality in adolescence. All schools received the questionnaire in advance

to judge whether item content was appropriate, since some of the questionnaire items referred explicitly to sexual activities and attitudes towards sex. None of the schools refused to participate after taking note of the questionnaire content. Also, permission for the study was granted by the ethics board of the faculty of social and behavioral science of Utrecht University and parental and adolescents' informed consent was gathered. Three parents did not want their child to take part in the study. Items about specific sexual activities were not obligatory for adolescents to fill in; these items had an extra answering category of "I don't want to answer this question". Questionnaires were filled in during a regular school hour, in the presence of two research assistants. These assistants introduced the questionnaire, stressed that data would be handled confidentially, and remained present during the school hour to answer any questions.

At baseline (T_1), 451 10th graders filled in a questionnaire. The second wave of data collection (T_2) took place after six months. The sample consisted of 48.8% girls ($n = 220$). The mean age of this sample at baseline was 15.45 ($SD = 1.22$ | min-max 14-18), and consisted predominantly of youths with a native Dutch background (84.4%, $n = 378$). A total of 434 adolescents (96.7%) reported to have a heterosexual orientation, while 0.4% ($n = 2$) had a homosexual orientation, 0.9% ($n = 4$) was bisexually oriented, and 2.0% ($n = 9$) was unsure of their sexual orientation. We collected two-wave longitudinal data from 310 adolescents. Attrition analyses revealed no significant differences on any study variable between adolescents who participated at T_1 versus T_2 .

Measures

Popularity. The extent to which adolescents were perceived as being popular was measured by asking the adolescent to name both five popular and five non-popular classmates. In accordance with the study of Prinstein et al. (2003), no a priori definitions for 'popular' and 'non-popular' were given to the students. On the basis of this information,

every student in a class received a summed score of how many times he or she was nominated as “popular” or “not popular”. In order to control for differences in class size, these summed scores were *z*-transformed. For both T₁ and T₂ final popularity scores were computed by subtracting the non-popular *z*-score from the popular *z*-score.

Sexual behavior. Adolescents’ sexual behavior was measured with four items that tapped into participants’ level of sexual experience at that point in time. The items were “Have you ever French kissed someone”, “Have you ever felt and caressed someone”, “Have you ever had oral sex”, and “Have you ever had sex (with penis in vagina)”. Adolescents responded to these questions on a three-point scale ranging from 1 = never, to 3 = often. Whenever adolescents marked “I don’t want to answer this question” with a specific item, this was scored as system missing. Internal consistency of the items was high ($\alpha = 0.88$ at T₁, 0.89 at T₂).

Statistical Analysis

In a first set of descriptive analyses, an ANOVA was performed to examine whether means and standard deviations for popularity and sexual behavior at wave 1 were potentially different for boys and girls. Next, to test the main hypothesis that popularity would be linked to increased sexual behavior in adolescents, I first examined whether there were significant bivariate correlations between popularity and sexual behavior at T₁ and T₂. Next, I performed a linear regression analysis to examine the predictive value of popularity at T₁ on sexual behavior over time (i.e., from T₁ to T₂). A moderator term of popularity \times gender was included in the last step of the regression model to test the hypothesis that gender would moderate the effect of popularity on sexual behavior. The explained variance of the regression model was examined by means of R². An additional regression analysis was executed to examine whether a reverse longitudinal relationship would exist. This analysis examined if sexual behavior at T₁ was associated with perceived popularity at T₂.

Results

At T₁, 79.9% ($n = 438$) of all respondents (50.7% boys) reported to be sexually experienced in some way (from French kissing to sex). Of these adolescents 51.1% reported to have ever French kissed someone, 43.4% reported to have ever felt and caressed someone, 19.3% reported to have ever had oral sex, and 17.4% reported to have ever had sex. The mean differences between boys and girls were examined with a t test; results are displayed in Table 1. Using an ANOVA, no significant differences were found between boys and girls in sexual behavior $F(1, 436) = 0.89, p = 0.35$, and popularity $F(1, 394) = 0.34, p = 0.56$ at T₁.

To examine cross-sectional and longitudinal bivariate associations between perceived popularity and sexual behavior, Pearson correlations were computed (Table 2). A large positive correlation was found between sexual behavior at T₁ and T₂ ($r = .81, n = 350, p = <.001$), with high levels of sexual behavior at baseline associated with high levels of sexual behavior at T₂. Also, a large positive correlation was found between popularity at T₁ and T₂ ($r = .91, n = 418, p = <.001$), with high levels of popularity at baseline associated with high levels of popularity at T₂. Furthermore, positive correlations were found between popularity and sexual behavior at both waves, indicating that higher levels of popularity were associated with higher levels of sexual behavior.

Longitudinal Regression – Perceived Popularity at T₁ on Sexual Behavior at T₂

Longitudinal hierarchical regression analysis was performed to establish whether popularity would predict sexual behavior over time. A moderation term for gender was specified; results are presented in Table 3. In the first model, no effect of gender on sexual behavior at T₂ was found. In the second model, a significant large association was found between sexual behavior at T₁ and sexual behavior at T₂. Also, a significant association was found between popularity at T₁ and sexual behavior at T₂ in the third model. This means that the more popular someone is perceived the more sexually experienced he/she is over time.

The interaction effect of popularity \times gender was entered at step 4 but no significant interaction effect was found. The total variance explained by the model as a whole was 68%. An additional regression analysis was performed to longitudinally examine whether a reverse longitudinal relationship would exist, from sexual behavior at T₁ to perceived popularity at T₂. No significant relationship was found (beta=-.04, $p = .35$).

Discussion

In the present research, data from 310 adolescents, ages 14-18, were analyzed, who participated in two waves of an ongoing longitudinal study. The question I tried to answer in this study was to what extent perceived popularity predicts sexual behavior over time. In addition, I examined whether gender moderated this relation between perceived popularity and sexual behavior. A positive longitudinal association between perceived popularity and sexual behavior was found, indicating that popularity is indeed linked with more sexual behavior over time. The results also showed that no differences exist between boys and girls in the association between perceived popularity and sexual behavior. Additional analysis showed no reverse association exists between perceived popularity and sexual behavior.

The finding regarding the positive association between perceived popularity and sexual behavior confirms previous findings (Mayeux et al., 2008; Prinstein et al., 2011). This consistency shows that perceived popularity is associated with different definitions of sexual behavior. Where Mayeux et al. (2008) investigated popularity in association with ever having had sexual intercourse; Prinstein et al. (2011) asked their respondents with how many partners they had had sexual intercourse in the past year. This study expands the definition of sexual behavior by examining four different items (i.e., from French kissing to sex). Another important contribution of the present study is the confirmation that the association already exists after only six months, where previous studies investigated larger time spans of respectively 18 and 24 months (Prinstein et al., 2011; Mayeux et al., 2008). The longitudinal

increase in sexual behavior as a consequence of higher popularity among one's peers' points to the validity and relevance of Moffitt's (1993) concept of the maturity gap. Indeed, adolescence may be a period where adolescents try to overcome the gap from biological to psychosocial maturity by starting to behave more adult-like (i.e. smoke cigarettes, drink alcohol or engage in sexual behavior). Exactly these behaviors are proven to be associated with popularity. In one study perceived popularity was associated with alcohol use and smoking cigarettes (Mayeux et al., 2008). Moreover, another study found perceived popularity to be positively related to smoking cigarettes and marijuana use (Prinstein et al., 2011). It thus seems to be that popular adolescents engage more in those behaviors, which are used to overcome the maturity gap, for example sexual behavior. Probably, popular adolescents are more concerned to overcome their maturity gap than those who are less popular. Social status is one of the most important things for adolescents and even more for popular youngsters (Cillessen & Rose, 2005).

Gender differences

The moderator term gender was investigated in the present study. Prinstein et al. (2011) found that only for boys, popularity was related to the number of adolescents' sexual partners. Here, we did not find evidence for a moderator effect of gender in the relation between perceived popularity and sexual behavior. Differences between these studies have to be kept in mind when trying to make sense of this discrepancy. A theoretical explanation of this inconsistency in the results can be that popularity is just as beneficial for as girls. Popularity seems to be related to good social and emotional skills (Farmer, Estell, Bishop, O'Neal, & Cairns, 2003). These skills increase the likelihood of entering an intimate relationship and consequently, the likelihood of gaining more sexual experience.

Mayeux et al.'s (2008) findings do match the results of this study where gender did not influence the association between perceived popularity and sexual behavior. A possible

explanation for the inconsistency with Prinstein et al. (2011) is the definition of sexual behavior both researchers used. Prinstein et al. (2011) measured sexual behavior in terms of the number of adolescent's sexual intercourse partners, where the other only asked respondents if they ever had sex (Mayeux et al., 2008). The latter definition of sexual behavior lies more in line with the definition in this study. Men report a greater number of sexual partners than woman (Oliver & Hyde, 1993). This can correspond with the fact that Prinstein et al. (2011) found that for boys but not girls, popularity was significantly linked with sexual behavior. In here, possibly the double standard plays a role. This means that for boys, having multiple partners is cool, when for girls having multiple partners is tricky reputation wise. Future research is needed to provide more insight.

As stated above, this study measured four items of sexual behavior (i.e. from French kissing to sex). A possible methodological explanation for not finding moderation for gender is the distribution in these items. For example boys have more experience in sex, where girls have more experience in oral sex. Oral sex was not included as sexual intercourse in Prinstein et al. (2011) study, which results in a misrepresentation of girls' sexual behavior. Marks and Fraley (2005) showed that standards and values for boys and girls on sexual behavior differ less than is often assumed. The fact that no interaction is found confirms this. The finding contradicts the double standard, where is assumed that woman are evaluated more negatively than man for having more sexual partners.

Additional analysis revealed no significant reverse association between perceived popularity and sexual behavior. This means that having sex does not make one more popular among one's peers. When looking at a previous study this finding evokes some question marks. In here researchers found a positive association between the timing of first intercourse and thinking that being popular was important. Authors observed that, especially for boys, engaging in sex could be used as a mechanism for attaining high social status (Meschke,

Zweig, Barber, & Eccles, 2001). Thinking about that it makes you more popular, is not the same as actual becoming more popular. More research is needed to shed light on this.

Limitations and Strengths of the Present Study

The present study offers an updated outlook on the association between perceived popularity and sexual behavior in adolescence. However, this study will require replication. Future work will benefit by overcoming the most significant limitations of this study. First, it is important to note that this study includes a reliance on youths' self-report measures of sexual behavior. An important limitation in the current use of self-reports thus is that social desirability may have biased the results. This can lead to an over- or underreporting of the adolescent's own sexual behavior. Second, generalizability was suboptimal. Results only can be generalized to adolescents of 14 to 18 years old who live in the region of the four biggest cities in the Netherlands or the northern part of the province Noord-Brabant and follow education on LWOO, VMBO or HAVO. Although findings indicated that the retained sample was representative of the larger population from which it was drawn, research with larger samples will be required. Finally, other possible moderators should be investigated. For example, early onset of puberty has been associated with both positive peer relationship and a tendency to engage in status offenses such as sexual activity (Halpern, Udry, Campbell, & Suchindran, 1993). Another candidate moderator variable may be peers' sexual behavior, because adolescents whose friends are sexually active are also more likely than others to engage in sex themselves (Smith, Udry, & Morris, 1985).

Overall, the present study is one of the first to demonstrate a positive association between perceived popularity and sexual behavior in a longitudinal design. Another particular strength is its large sample size. Because of these aspects we were able to measure developments and changes in behavior, associated with popularity, over a period of six months. Next to that, we shed light on another discussion by examining the reverse

association. Until now, not much research had investigated how sexual behavior can influence perceived popularity. This brings up a new discussion that needs more research.

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Table 1

Means and Standard Deviation for Perceived Popularity and Sexual Behavior at Time 1

	Boys			Girls		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Sexual behavior	222	1.74	0.63	216	1.80	0.63
Popularity	199	0.04	1.00	197	-0.02	0.99

Table 2

Pearson Correlations between Popularity and Sexual Behavior

Variable	1	2	3	4
1. Sexual Behavior T ₁	-			
2. Popularity T ₁	.35**	-		
3. Sexual Behavior T ₂	.81**	.38**	-	
4. Popularity T ₂	.35**	.91**	.33**	-

** $p < .01$.

Table 3

*Longitudinal Hierarchical Regression Analysis:**Sexual Behavior at T₂ on Popularity at T₁*

Step and variable	Sexual behavior, T ₂
Step 1	
Gender	.02
Step 2	
Gender	-.02
Sexual behavior, T ₁	.82***
Step 3	
Gender	-.02
Sexual behavior, T ₁	.77***
Popularity	.13***
Step 4	
Gender	-.02
Sexual behavior, T ₁	.77***
Popularity	.16**
Popularity × Gender	-.04
Step 1 ΔR^2	.00
Step 2 ΔR^2	.67***
Step 3 ΔR^2	.01***
Step 4 ΔR^2	.00
Total model R ²	.68

Standardized betas are presented for both main and interaction effects. *p < .05. ** p < .01. ***p < .001.