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Health Educ Behav 2007; 34; 686 originally published online Aug 2, 2006;

DOI: 10.1177/1090198106289571

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Predicting Willingness to Engage in Unsafe Sex and Intention to Perform Sexual Protective Behaviors Among Adolescents

Ingri Myklestad, MD
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This article examines the sociocognitive processes contributing to intention to use contraception and willingness to engage in unsafe sex, using extended versions of the theory of planned behavior (TPB) and the Prototype/Willingness model (Gibbons & Gerrard, 1995, 1997). Data were obtained from a questionnaire delivered to all the pupils in ninth grade ($N = 196$) at three schools in Oslo. Hierarchical multiple regression analysis was used to predict intention and willingness. The results showed that subjective norm was the most important predictor of intentions for girls, whereas moral norm was most important for boys' intentions and willingness. Prototypes were the most important predictor for girls' willingness. Implications of the findings are discussed.

Keywords: *contraceptive behavior; adolescents; theory of planned behavior; Prototypes/Willingness model; moral norm*

Unsafe sexual behavior among teenagers may lead to serious social consequences as unwanted pregnancies and sexual transmitted diseases (STDs). The rate of reported positive chlamydia trachomatis has increased the past 5 years among young people between 15 and 25 years in Norway (Nilsen, Blystad, & Aavitsland, 2004); among Norwegian women aged 16 to 24 years, the prevalence of chlamydia trachomatis was 2.4% (Bakken, Skjeldestad, Øvreness, Nordbø, & Størvold, 2004). A similar increase among young people has been found in other Western countries as well, for example, in the United Kingdom (British Medical Association [BMA], 2002) and the United States (Ford, Jaccard, Millstein, Bradsley, & Miller, 2004).

In Norway, the birth rate among teenagers (15-19 years) is low compared to the United States, being 8 per 1,000 women (Statistic Norway, 2005) and 52 per 1,000 women (Lederman, Chan, & Roberts-Gray, 2004), respectively. However, pregnancies among teenagers vary across different regions in Norway; the birth rate among

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This project has been financed with the aid of EXTRA funds from the Norwegian Foundation for Health and Rehabilitation. Also, the authors wish to thank Arne Holte, Division of Mental Health, Norwegian Institute of Public Health, Ingunn Størksen, University of Stavanger, and Pål Kraft, University of Oslo, for constructive discussions.

Health Education & Behavior, Vol. 34 (4): 686-699 (August 2007)

DOI: 10.1177/1090198106289571

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teenagers in the more socially deprived parts of Oslo was seven times higher than in some of the more well-off parts of the city (Rognerud & Stensvold, 1998). Teenage abortion rates in Norway have been in the middle to high compared to other Western countries (15.7 per 1,000 women aged 15-19 years old in 2004) (Statistic Norway, 2005).

Pedersen and Samuelsen (2003) found that the median age at first intercourse has fallen from 17.7 years in 1992 to 16.7 years in 2002 among girls and from 18.5 years to 18.0 years among boys in Norway. Furthermore, they reported that 23% of the girls and 19% of the boys reported having had their sexual debut at age 15. This is alarming when we know that early sexual debut is associated with lower use of contraception (e.g., Wellings et al. 2001). In the United States, the sexual activity among adolescents has decreased, although rates are still high enough to warrant concern; approximately one fourth of all youths report having had sexual intercourse by age 15 (Klein & the Committee on Adolescence, 2005). A recent nationwide study in Norway found that 33% of people between 18 and 22 years reported not using any contraception at their first intercourse, whereas only 45% reported using a condom at first intercourse (Træen, Stigum, & Magnus, 2003). For comparison, 63% of high school students in the United States reported using a condom the last time they had intercourse (Centers for Disease Control and Prevention, 2004).

In order to increase the use of contraceptives to prevent STDs and unintended pregnancies, there is a need for effective prevention programs for young people. The first step in such an endeavor may be to identify modifiable cognitions that characterize individuals who are likely to adopt preventive sexual practices. Thus, a number of social cognitive models specify a limited set of such determinants of which the most popular model is the theory of planned behavior (TPB; Ajzen, 1991). The TPB states that the most proximal determinant of behavioral performance is the intention to act. Intention provides a summary of the person's motivation to perform the behavior and is mediating the other variables on the behavior. TPB posits three determinants of intention to use, for example, contraception. First, attitudes toward using contraception refer to individuals' positive or negative evaluations of it. Second, subjective norms refer to individuals' perception of social pressure to use contraception in terms of what significant others think you should do. The third component is perceived behavioral control (PBC) and refers to the perception of ease and difficulty of using contraception. The TPB has been successfully applied to a wide range of health-related behaviors, including condom use (Albarracín, Johnson, Fishbein, & Muellerleile, 2001; Armitage & Conner, 2001) and contraceptive use (Fekadu & Kraft, 2001; Richard, de Vries, & van der Pligt, 1998), and has therefore been applied as a starting point for this study.

The present study investigates intention to use contraception as the dependent variable, rather than the more common used intention to use condom. This was partly due to the results of a pilot study in which the participating adolescents reported that several contraceptive measures may be relevant for their protection against unwanted pregnancies and STDs. Findings from a meta-analysis on condom use (Sheeran, Abraham, & Orbell, 1999) also suggested that studying different contraception choices may provide a greater understanding of this topic. In addition, few studies have investigated the intention to use contraception in relation to TPB.

A number of researchers have noted shortcomings of the TPB in that it does not provide a sufficient prediction of behavioral intentions (for a review, see O'Keefe, 2002). However, to the extent that other predictors account for a significant contribution, additional significant predictors may be included (Ajzen, 1991). Thus, we have extended the TPB with moral norm and prototype perception. Moral norms may not be fully captured by subjective norms. Moral norms can have their origins in social norms, but such

norms become internalized and autonomous, exercising influence over the individuals' thoughts, feelings, and behaviors independently of the immediate context (Manstead, 2000). Moral norms have been included successfully as an additional predictor of intentions for health behaviors, including sexual and contraceptive behavior (e.g., Armitage & Conner, 1998; Conner, Graham, & Moore, 1999). Prototypes are the social images that adolescents have of the types of people that engage in certain health risk behaviors or health behaviors. We have employed a health-promoting prototype and a health risk prototype because both kinds are important in safe-sex behaviors (Gibbons & Gerrard, 1995). The role of prototypes in health-related decisions of young people has been examined from the perspective of the Prototype/Willingness (P/W) model (Gibbons & Gerrard, 1995, 1997). In some circumstances an adolescent may be willing to perform a risk behavior which the person otherwise had planned not to perform. Previous studies have found significant relations between prototypes and behavioral intention, and between prototypes and behavioral willingness (e.g., Gibbons, Gerrard, Blanton, & Russell, 1998; Ravis & Sheeran, 2003; Spijkerman, van den Eijnden, Vitale, & Engels, 2004). Thus, behavioral willingness has in several cases been found to be a better predictor than intention of adolescents' risk behavior (Gibbons et al., 1998).

Several studies have found gender differences among adolescents related to different aspects of sexual behaviors like attitudes, self-efficacy and motivation, (e.g., Conner et al., 1999; Sutton, McVey, & Glanz, 1999). It should be noted that these data pertain to the differences in mean level of variables among girls and boys, and whether or not the processes underlying sexual behavioral decisions differ between girls and boys remains quite another matter. Such studies have typically not been performed in the context of the TPB, although some of the studies have tested whether the TPB components interact with gender (e.g., Bryan, Fisher, & Fisher, 2002). The same concerns studies using the P/W model (Gibbons & Gerrard, 1995; Gibbons et al., 1998).

Most of the adolescents in the present study (83%) did not have any sexual and contraceptive experience. Hence, it was decided not to measure contraceptive behavior directly but indirectly through the adolescents' intentions to use contraception in the future and through their willingness to engage in unsafe sex. In support of this decision, two recent meta-analyses concerning the TPB have identified relatively strong correlations between intentions to use condoms and actual condom use (Albarracín et al., 2001; Sheeran & Orbell, 1998). The few studies that have used the TPB in relation to contraception in general found that behavioral intentions explained 34% of the variance in contraceptive behavior (Richard et al., 1998). In addition, the relation between willingness and sexual risk behavior (Gibbons et al., 1998; Gibbons, Gerrard, & Lane, 2003) has been found to be even stronger. Finally, the selection of young teenagers for the present study derives from previous findings suggesting that the most adequate age at starting interventions should be before young people have established their sexual behavioral patterns (e.g., Santelli, DiClemente, Miller, & Kirby, 1999). Thus, our result may provide useful information for intervention programs among young adolescents.

HYPOTHESES

We hypothesize the following:

Hypothesis 1: The TPB components, attitudes, subjective norms, and perceived behavioral control will predict intention to use contraceptives. Furthermore, the additional variables, moral norms, and the risk and health-promoting prototypes will improve

the predictive utility of the TPB significantly. Finally, we expect that there are gender differences related to the predictors on intention to use contraception.

Hypothesis 2: The TPB components will predict willingness to engage in unsafe sex. Moral norm and prototypes will improve the predictive utility of the TPB significantly. Furthermore, consistent with the P/W model, the prototypes will predict willingness to a greater extent than intention. Finally, we expect gender differences related to the predictors on willingness.

METHOD

Study Population

A questionnaire was administered to all pupils in ninth grade at three schools in Oslo in 2001; 196 pupils answered the questionnaire (88% response rate). The mean age was 14.5 years, and the standard deviation was 0.4 years. The age range was from 13.8 to 16.0 years; 92% of the participants were 14.0 to 15.0 years, 8% were 15.0 to 16.0 years, and 0.5% were younger than 14.0 years. Eighty-eight of the participants were boys, and 108 were girls. The schools in the study were selected on the basis of belonging to a part of the city with a high rate of teenage pregnancies (60 per 1,000 women, 13- to 19-year-olds; Rognerud & Stensvold, 1998).

Administration of the Survey

Permission to carry out the project was given by the Data Inspectorate, as well as headmaster, teacher staff, and school council, before the individual students were approached. The participants had to give their informed consent in writing, together with a written permission from their parents. The participants did not receive any incentives for participating in the study. The questionnaire was handed out directly to the participants in the classroom by the project staff, and they were allowed to use 2 hours in school to complete the anonymous questionnaire. The participants were allowed to not complete the questionnaire. The teachers were either passive observers or not present in the classroom during the completion of the questionnaire. To protect confidentiality, the participants were placed under exam conditions, and after completion, the participants sealed the questionnaire in a business envelope provided by the project staff.

Measures

There are standard procedures and methods to measure the concepts in the study. Still, the content in the concepts of prototypes and willingness was identified in a pilot study. Based on five focus group interviews with participants from the target population ($N = 18$), prototype adjectives and sexual risk situations were modified to form a prototype measure and a willingness measure more suitable for Norwegian respondents. The most frequently occurring responses formed the basis for the prototype and willingness measure.

Intention to use contraception was measured by asking "If you have sexual intercourse in the forthcoming 3 months, do you intend to use contraception?" on a 7-point scale from 1 (*very unlikely*) to 7 (*very likely*).

Willingness to involve in unsafe sex was measured by a scenario describing a situation where two teenagers at a party want to have intercourse, but they do not have any condoms available or use other kinds of contraception. They were then asked how likely it was that they would do each of the following: "not have sex"; "have sex without using a condom"; and "have sex, but use withdrawal." Each statement was accompanied by a response scale ranging from 1 (*very unlikely*) to 5 (*very likely*). The responses of the first statement were reversed. A principal component analysis (PCA) showed that the three items loaded on one factor. The item "have sex, but use withdrawal" was found to have low reliability and was removed; presumably, the study population of young teenagers had little experience and knowledge of this method. The mean value of the remaining two items was used in the analysis ($r = .75$). A high score reflected stronger willingness to have unsafe sex.

Attitudes toward use of contraception were measured with five items using a semantic differential scale (7-point): "For me to use contraception if I have sexual intercourse in the forthcoming 3 months will be *wrong-right*, *bad-good*, *stupid-smart*, *unreasonable-reasonable*, and *useless-useful*." PCA showed that the five items loaded on one single factor. The mean value of the five items was used in the analysis ($\alpha = .96$).

Subjective norms were measured with three items as follows: "People who are important to me believe that I should use contraception, if I have sexual intercourse in the forthcoming 3 months"; "People who are important to me would wish that I use contraception, if I have sexual intercourse in the forthcoming 3 months"; and "People who are important to me would not like me to use contraception if I have sexual intercourse in the forthcoming 3 months," using the response scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The responses to the last item were reversed. PCA showed that the three items loaded on one factor. The mean value of the three items was used in the analysis ($\alpha = .69$).

Perceived behavioral control was measured with six items: "If I have sexual intercourse in the forthcoming 3 months, (a) it is completely up to me if I will use contraception; (b) there will be no problem for me to use contraception if I really want to; (c) it will be difficult for me to use contraception; (d) I will have full control when using contraception; (e) I would like to use contraception, but I am not sure I am able to do it; and (f) it will be easy for me to use contraception," using the response scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The responses to statements C and E were reversed. PCA with varimax rotation of the six items produced one factor. Furthermore, a reliability analysis indicated that the first item reduced the internal consistency of the construct and was removed ($\alpha = .66$). The mean score of the five remaining items was used in the analysis.

Moral norm was measured by two items: "For me to have sexual intercourse without using contraception will be morally wrong" and "If I have sex without contraception, I will be troubled with bad conscience," using a response scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The mean value of the two items was used in the analysis ($r = .81$).

The health risk prototype was measured by asking the following: "Imagine a typical boy who does not use a condom. How will you describe this boy, using the following characteristics: smart, stupid, clever, mature, attentive, reasonable, irresponsible, boring, prepared, popular, confident, immoral, cheap, desperate, and conceited?" The response scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). PCA with varimax rotation of the 15 items produced two distinct factors: *Reasonable* (including smart, clever, mature, attentive, reasonable, prepared, and confident) and *Conceited* (including desperate, conceited, cheap, boring, immoral, popular, stupid, and irresponsible). The item *popular* was removed from the factor *Conceited* because of low reliability. The internal consistency of the factor *Conceited* was $\alpha = .75$. For the factor

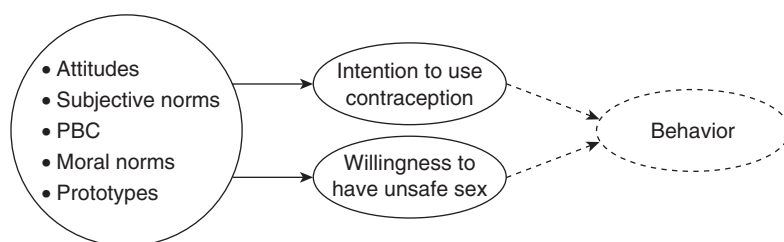


Figure 1. Theoretical model of the study.

NOTE: The part of the theoretical model studied in this work is shown with solid lines. PBC = perceived behavioral control.

Reasonable, all the items were included in the scale ($\alpha = .89$). The mean scores of the items in the respective factors were used.

The *health-promoting prototype* was measured by asking the following: "Imagine a typical girl who uses contraceptive pills. How will you describe this girl, using the following characteristics: smart, stupid, clever, mature, attentive, reasonable, irresponsible, boring, prepared, popular, confident, immoral, cheap, desperate, and conceited?" The response scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). PCA with varimax rotation of the 15 items produced two distinct factors: *Reasonable* (including smart, reasonable, clever, prepared and confident, mature and attentive) and *Desperate* (including desperate, cheap, immoral, conceited, boring, stupid, irresponsible, and popular). The items *attentive*, *mature*, and *prepared* were removed from the factor Reasonable because of low reliability ($\alpha = .87$). Furthermore, the items *conceited*, *popular*, and *boring* reduced the internal consistency for the factor Desperate and were therefore removed ($\alpha = .84$). A mean was then calculated for the two subscales.

Strategy for Data Analysis

Hierarchical regression analysis was performed to test for the hypothesis in the extended version of the TPB model, by entering the TPB variables first in the regression analysis followed by the additional variables, moral norm in Step 2 and the prototypes in Step 3. This was done to test whether the variables moral norms and prototypes would predict intention to use contraception and willingness to involve in unsafe sex, in addition to the contribution from the TPB components (see Figure 1).

Given that gender is a dichotomous variable, the moderating effect of gender may be studied by conducting separate regression analyses for male and female respondents, and then compare the unstandardized regression coefficients as suggested by Baron and Kenny (1986). In addition, the standardized beta values are presented separately for boys and girls and thus show the value of differences between them.

RESULTS

Descriptive statistics (means and standard deviation) along with the correlations among the variables of the models are given in Table 1. For girls, the intention to use contraception correlated significantly with all measures except for the risk prototype

Table 1. Correlations, Range for Each Item, Means, and Standard Deviations for the Study Variables

	1	2	3	4	5	6	7	8	9	10	Range	M	SD
1. Intention	—	-.32**	.47***	.64***	.31**	.36***	.20*	-.53***	-.44***	.06	7	6.52	.99
2. Willingness	-.15	—	-.08	-.20*	-.10	-.43***	-.01	.04	.51***	-.28**	5	1.59	.88
3. Attitude	.28**	-.11	—	.61***	.30**	.16	.34**	-.55***	-.30**	.02	7	5.98	1.76
4. Subjective norm	.57***	-.25*	.41***	—	.46***	.34**	.33**	-.49***	-.35***	.11	7	6.31	1.16
5. PBC	.44***	-.001	.24*	.59***	—	.17	.27**	-.22*	-.22*	.10	7	5.49	1.09
6. Moral norm	.52***	-.37**	.15	.37**	.12	—	.06	-.14	-.29**	.26**	7	5.41	1.66
7. Health prototype: Reasonable	.41***	-.01	.19	.31**	.30**	.35**	—	-.69***	-.17	-.06	5	3.90	.88
8. Health prototype: Desperate	-.25*	.03	-.28**	-.38**	-.36**	-.27*	-.63***	—	.33**	.23*	5	2.09	.97
9. Risk prototype: Reasonable	-.21*	.15	-.13	-.30**	-.22*	-.01	-.39***	.43***	—	-.35***	5	1.81	.86
10. Risk prototype: Conceited	.29**	-.19	.12	.36**	.35**	.18	.26*	-.18	-.24*	—	5	3.44	.86
Range for each item	7	5	7	7	7	7	5	5	5	5	5	—	—
M	6.35	3.01	6.07	5.86	5.37	5.16	4.03	2.23	2.27	3.18	—	—	—
SD	1.31	1.28	1.39	1.26	.97	1.47	.85	.98	.98	.87	—	—	—

NOTE: The results for girls ($n = 84$) are above the diagonal, and the results for boys ($n = 72$) are below the diagonal. PBC = perceived behavioral control. * $p < .05$. ** $p < .01$. *** $p < .001$.

Conceited. In contrast, willingness to have unsafe sex correlated significantly only with subjective norm ($r = -.20, p < .05$), moral norm ($r = -.43, p < .001$), and the risk prototypes Reasonable ($r = .51, p < .001$) and Conceited ($r = -.28, p < .01$). For boys, intention to use contraception correlated significantly with all measures except for willingness. Willingness to have unsafe sex correlated significantly only with moral norm ($r = -.37, p < .01$) and subjective norm ($r = -.25, p < .05$). The health-promoting prototypes correlated zero ($r = -.01$ to $r = .04$) with willingness among both boys and girls and was therefore not included in the regression analysis for behavioral willingness.

Prediction of Intention to Use Contraception

Table 2 shows that the TPB components accounted for 32% of the variance in intentions among boys, whereas subjective norms were the only significant predictor ($\beta = .46, p < .01$). The inclusion of moral norms in the second step increased the explained variance significantly ($R^2 = .43, p < .001$), whereas inclusion of the prototypes in the final step did not. Thus, subjective norms and moral norm were the only significant predictors of intentions to use contraception in the final step ($\beta = .26, p < .05$ and $\beta = .40, p < .001$) among boys. For girls, the TPB components accounted for 40% of the variance in intentions, and again subjective norm was the only significant predictor ($\beta = .55, p < .001$). The inclusion of moral norm in the second step did not increase the explained variance significantly. In contrast, the inclusion of the three prototypes in the final step increased the explained variance significantly to 48%. The health-promoting prototype *Desperate* and the risk prototype *Reasonable* added significantly to the understanding of intentions to use contraception among girls ($\beta = -.22, p < .05$ and $\beta = -.20, p < .05$). Thus, two significant gender differences were observed for intention; moral norms were a stronger predictor among boys, whereas the prototype *desperate* was a stronger predictor among girls (see Step 3, Table 2).

To reduce multicollinearity between the two health-promoting prototypes, the same analysis was performed a second time, with the health-promoting prototype *Desperate* replaced by the health-promoting prototype *Reasonable* in Step 3 as recommended by Lewis-Beck (1980). The same significant results were found as in the first analysis (see Table 2), although the health-promoting prototype *Reasonable* did not add significantly for intention for either girls or boys.

Prediction of Willingness to Engage in Unsafe Sex

The results of the hierarchical regression analyses for willingness are also shown in Table 2. In the first step, the TPB components accounted for 5% of the variance in willingness for boys, with only subjective norms ($\beta = -.38, p < .05$) as a significant predictor. Including moral norm in the second step raised the explained variance significantly to $R^2 = .12$ ($p < .05$). Furthermore, moral norm was the only significant predictor of willingness in the final step for boys ($\beta = -.30, p < .05$). For girls, the TPB components in the first step accounted for 1% of the variance in willingness, and none of the variables were significant predictors of willingness. Including moral norm in the second step raised the explained variance significantly to $R^2 = .15$ ($p < .001$). Inclusion of the prototypes in the final step increased the explained variance significant to $R^2 = .31$ ($p < .001$). Moral norm ($\beta = -.30, p < .01$) and the risk prototype *Reasonable* ($\beta = .42, p < .001$) were the only significant predictors of willingness in the final step for girls. Furthermore, no significant gender differences were observed in relation to willingness.

Table 2. Hierarchical Regression Analyses Predicting Intention to Use Contraceptives, and Willingness to Engage in Unsafe Sex

	Intention						Willingness								
	Boys (n = 72)			Girls (n = 83)			Boys (n = 70)			Girls (n = 84)					
	Adjusted R ²	β	B	SE	β	B	SE	t-value	Adjusted R ²	β	B	SE	t-value		
Step 1															
Attitude		.06	.05	0.10	.13	.07	0.06			-.01	-.01	0.12	.10	.04	0.07
Subjective norm		.46**	.48	0.13	.55***	.47	0.10			-.38*	-.38	0.15	-.26	-.19	0.11
Perceived behavioral control		.15	.21	0.17	.02	.02	0.09			.22	.29	0.19	-.004	-.003	0.10
	.32***				.40***				.05				.01		
Step 2															
Attitude		.06	.06	0.09	.14	.08	0.06			-.04	-.03	0.12	.04	.02	0.06
Subjective norm		.29*	.30	0.13	.49***	.41	0.10			-.22	-.22	0.16	-.10	-.08	0.11
Perceived behavioral control		.20	.28	0.15	.02	.02	0.09			.16	.21	0.19	-.003	-.002	0.09
Moral norm	.43***		.38***	.34	0.09	.17	.10	0.05		-.30*	-.27	0.11	-.41***	-.21	0.06
					.42				.12*				.15***		
Step 3															
Attitude		.08	.07	0.10	.02	.01	0.06	0.07		-.03	-.03	0.12	.09	.04	0.06
Subjective norm		.26*	.27	0.14	.40**	.34	0.10	-0.43		-.17	-.17	0.17	-.04	-.03	0.10
Perceived behavioral control		.22	.30	0.16	.01	.01	0.08	1.62		.19	.26	0.19	.03	.02	0.08
Moral norm		.40***	.36	0.09	.14	.09	0.05	2.60**		-.30*	-.27	0.11	-.30**	-.16	0.05
Desperate		.11	.14	0.15	-.22*	-.23	0.11	1.98*		.11	.14	0.16	.42***	.43	0.11
Reasonable		-.10	-.14	0.14	-.20*	-.22	0.11	0.49		-.12	-.17	0.18	-.05	-.05	0.10
Conceited	.43		.04	.06	0.15	-.04	0.11	0.55	.12				-.31***	-.05	0.10

NOTE: Desperate = the health-promoting prototype *Desperate*; Reasonable = the risk prototype *Reasonable*; Conceited = the risk prototype *Conceited*.

* $p < .05$. ** $p < .01$. *** $p < .001$.

DISCUSSION

The aim of this study was to explore whether the TPB extended with moral norm and health risk and health-promoting prototypes predicted intention to use contraception and the willingness to engage in unsafe sex among adolescents. As expected, the TPB components predicted intention better than willingness, thus the TPB components accounted for 32% of the variance in intentions to use contraception among boys and 40% among girls. The predictive power of the TPB among girls compares favorably with the results of meta-analysis on health behaviors and condom use, in which the TPB components accounted for 39% and 41%, respectively, of the variance in behavioral intentions (Armitage & Conner, 2001; Sheeran & Taylor, 1999). These findings demonstrate that the TPB provides an important framework for studying contraceptive intentions among young adolescents.

The TPB components did not predict willingness to engage in unsafe sex because only 5% of the variance in willingness was accounted for by the three theoretical components for boys and 1% among girls. In this context, it should be noted that attitudes, subjective norms, and perceived behavioral control are assessed in relation to use of contraceptives and not in relation to involvement in unsafe sex. Hence, the predictive power of the former needs to be higher than the latter in terms of the logic of the principle of compatibility (e.g., Ajzen & Fishbein, 1980). It should also be noted that subjective norms were the most important predictor for intentions to use contraceptives; for girls also when additional predictors were accounted for. This is a noteworthy finding considering the fact that subjective norms are identified as the least important predictor of the three TPB predictors in general reviews and meta-analysis (Ajzen, 1991; Armitage & Conner, 2001), including meta-analyses of condom use (Albarracin et al., 2001; Sheeran & Taylor, 1999). The inclusion of moral norm increased the predictive power of the model, in particular for willingness, but also for intentions among boys, and its predictive ability remained in the final step. Inclusion of prototypes increased the predictive power of the model only for girls and in particular for willingness, a finding that is consistent with the P/W model for girls (Gibbons & Gerrard, 1995, 1997; Gibbons et al., 1998; Gibbons et al., 2003). Finally, the present study showed that different social and psychological processes contributed to the prediction of intentions to use contraception and the willingness to involve in unsafe sex, consistent with the P/W model.

Normative Influence

The role of subjective norms in the intention formation process was noteworthy. This study has shown that social influence, not personal factors, was the most important predictor for contraceptive behavioral intentions among adolescence. The adolescence life stage is marked by a heightened concern about social appearance and peer approval, thus social consequences are often more important for their behavioral decisions than attitudes (Gibbons & Gerrard, 1997). A meta-analysis on condom use showed that norms generally had greater influences on younger than older individuals (Albarracin, Kumkale, & Johnson, 2004), and several earlier studies have found that normative influence was more strongly associated with adolescents' contraceptive use than with attitudes (e.g., Crosby et al., 2003; Fekadu & Kraft, 2001; Jemmott, Jemmott & Villaruel, 2002).

Most of the adolescents in the present study are not sexually experienced and have never used contraception. This might influence the findings, for example, in that decisions to

use contraception may be more distal and less based on their personal experiences. Thus, decisions whether or not to use contraception may be more based on social expectations than a personal evaluation of the benefits and drawbacks of using contraception. Lack of personal experience may lead them to lean on other outside information as social reference groups, such as subjective norm and moral norm.

Moral Norm

Moral norms were the most important predictor of intentions to use contraception for boys, whereas they were not a significant predictor for intention among girls. The results for boys are consistent with earlier studies (e.g., Boyd & Wandersman, 1991; Conner et al., 1999). Furthermore, moral norms are most important for predicting behavior in situations where individual rewards of the behavior are in conflict with personally held moral norms (Manstead, 2000). Earlier studies have shown that girls have more positive attitudes, stronger intentions, and are more engaged in using contraceptives (Conner et al., 1999; Wight, Abraham, & Scott, 1998), compared with boys. Hence, this conflict between personally held moral norms and individual rewards seems to be less salient for girls than for boys. On the other side, moral norms were an important predictor for willingness to engage in unsafe sex among both boys and girls. This suggests that the moral aspects of unsafe sex are more salient for adolescent girls when asked, "What are you willing to do?" in a specific social context (e.g., met a likable guy on a party), which requires that they must take an active decision and consider the consequences directly in the situation. On the contrary, moral considerations may not be so accessible when they are asked for plans or intentions for future contraceptive use.

Prototypes

Prototypes related to contraceptive pills and condom use had considerable impact on intentions to use contraception and willingness to engage in unsafe sex among young adolescent girls; this was not the case for boys. For girls, these results are consistent with earlier studies (e.g., Gibbons & Gerrard, 1995; Spijkerman et al., 2004). The reason for the gender difference could be that girls are more engaged in the topic of contraception in the sense that they have more knowledge, discuss contraception use more often with others, and are more motivated for preventing pregnancies (Hansen & Skjeldestad, 2003; Wight et al., 1998) compare with boys. Likewise, consistent with the P/W model (Gibbons et al., 2003), boys might not identify with the prototype related to contraception because the behavior is not relevant for them yet and not common enough among their friends.

Limitations

A limitation of this study is that we measured behavior indirectly through intention and willingness. As mentioned above, however, recent meta-analyses have found quite strong considerable correlations between intention and contraceptive behavior (Albarracin et al., 2001; Sheeran & Orbell, 1998), and willingness is usually an even stronger predictor for behavior than intention among adolescents (Gibbons et al., 2003). A second limitation is that intention to use contraception was measured using one single item, which might lower the reliability of the measure. However, single-item measures of intentions have been found to be reliable predictors for contraception

behavior in other studies among young people ($r = .31-.60$) (for a review, see Sheeran & Orbell, 1998). Substantial correlations were observed between the measure of intention and the other TPB measures, which are indicative of a reliable measure. Finally, the major limitation of the study concerned the fact that it was based on data obtained from a relatively small sample. Future research should attempt to replicate the present finding in a larger sample of adolescents.

Practical Implications

Findings from the present study indicate that safe sexual programs for adolescents need to emphasize normative influence and be gender specific. Young people often have a common misunderstanding that other teenagers are involved in more risk behavior than actually is the case (e.g., Gibbons et al., 2003). Thus, an effective intervention may be to educate adolescents about how many teenagers actually use contraceptives or are involved in sexual risk behavior (Crosby et al., 2003). Another effective program related to normative influence may be to promote favorable norms for contraceptive use among adolescents (Kennedy, Mizuno, Seals, Myllyluoma, & Weeks-Norton, 2000). In addition, targeting normative influence may also be an effective intervention for changing unhealthy prototypes. For example, teenagers are shown that the unsafe sexual prototype is more negatively evaluated by their peers than they perceive it to be, and thus they are able to lower the prescriptive strength of conforming to the group norm (Gibbons & Gerrard, 1995).

To address moral considerations, programs may include small group discussions led by a competent educator about moral responsibility for one's sex partner as well as oneself (Boyd & Wandersman, 1991). These intervention programs should also focus on educating young people about the differences between intention and willingness, and the fact that much of their risk behavior is not intended. Likewise, interventions should encourage considerations of the adolescents' willingness to put themselves in risk-conductive situations and plan ahead to avoid these kinds of situations (Gibbons et al., 2003).

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