

This article was downloaded by: [Erasmus University Library / Rotterdamsch Leeskabinet / Erasmus MC / Univ Med Centre Rotterdam]

On: 26 May 2010

Access details: Access Details: [subscription number 911208275]

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Psychology & Health

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713648133>

The impact of information about the prevalence of AIDS-Preventive behavior among men and women: The mediating role of social norms

Regina J.J.M. Van Den Eijnden^a; Bram P. Buunk^a; Arnold B. Bakker^a; Frans W. Siero^a

^a Department of Psychology, University of Groningen, Groningen, The Netherlands

To cite this Article Eijnden, Regina J.J.M. Van Den , Buunk, Bram P. , Bakker, Arnold B. and Siero, Frans W.(1998) 'The impact of information about the prevalence of AIDS-Preventive behavior among men and women: The mediating role of social norms', *Psychology & Health*, 13: 3, 467 – 478

To link to this Article: DOI: 10.1080/08870449808407304

URL: <http://dx.doi.org/10.1080/08870449808407304>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

THE IMPACT OF INFORMATION ABOUT THE PREVALENCE OF AIDS-PREVENTIVE BEHAVIOR AMONG MEN AND WOMEN: THE MEDIATING ROLE OF SOCIAL NORMS

REGINA J.J.M. VAN DEN EIJNDEN*, BRAM P. BUUNK,
ARNOLD B. BAKKER and FRANS W. SIERO

*University of Groningen, Department of Psychology, Grote Kruisstraat 2/1,
9712 TS Groningen, The Netherlands*

(Received 5 April, 1996; in final form 5 December, 1996)

The present study was designed to examine the effect of information about the high prevalence of safe sex on condom use intention, and to investigate the possible mediating role of the perceived social norm of friends, and the perceived social norm of future sexual partners. Participants were provided with gender specific prevalence information, that is with the information that most men have exclusively safe sex, or with the information that most women exclusively engage in safe sexual behavior. The results show some gender differences. Information about the high prevalence of safe sex among men tends to increase women's condom use intention, and this effect seems to be mediated by the perceived social norm of future sexual partners. Men's intention, on the other hand, seems to be unaffected by high prevalence information of safe sex. Implications for research and prevention are discussed.

KEY WORDS: AIDS, prevalence information, gender, condom use, social norms.

Decisions with respect to AIDS-preventive behavior are not made in a social vacuum. The social context plays an important role (Fisher and Misovich, 1990), as the behavior of others may affect one's own behavioral choices. Individuals may conform to what similar others do, partly because conformity may be socially rewarding (Suls and Wills, 1991). This tendency is nicely illustrated by the findings of a previous study, which showed that information about the high prevalence of safe sex increased the intention to use condoms (Van den Eijnden, Buunk, Plaggenborg and Hoorens, 1994). However, little is known about the underlying psychological mechanisms involved in this particular change in condom use intention. The main aim of this study is to investigate two processes that may play a role in this regard. More specifically, it is examined to what extent the effect of prevalence information on the intention to use condoms is mediated by a change in the perceived social norm of one's friends, and in the perceived social norm of future sexual partners.

A first process that may underlie a change in one's intention to use condoms after receiving information about the high prevalence of safe sex is that people infer from this information what is considered appropriate behavior by their reference group (cf. Festinger, 1954; Suls and Wills, 1991). One may reason that the more other people engage in safe sex, the stronger unsafe sexual behavior will be disapproved of. The behavior of similar others has a normative value (Aronson, 1992; Deutsch and Gerard,

* Corresponding author. E-mail: R.van.der.Eijnden@ppsw.rug.nl.

1955; Kelley, 1952), and people tend to act in accordance with these norms because they feel that they should live up to others' expectations, or because they fear negative consequences of non-conformity, such as social rejection (Forsyth, 1990, p. 166). Indeed, several studies have shown that the perceived social norm of one's reference group is an important determinant of AIDS-preventive behavior, both among adolescents (De Wit, Kok, Timmermans and Wijnnsma, 1990; Schaalma, Kok and Peters, 1993; Winslow, Franzini and Hwang, 1992), and among adults (Buunk, Bakker, Siero and Van den Eijnden, *in press*). Therefore, it seems plausible that the effect of high prevalence information of safe sex upon the intention to use condoms will be mediated by a change in the perceived social norms of friends.

A second process that may underlie a change in intention to use condoms after receiving information about the high prevalence of safe sex, is that people may view this information as an indicator for what they may expect from future sexual partners. They may reason that if most people have safe sex, the probability that future sexual partners will disapprove of unsafe sex is high. Indeed, research in the area of AIDS-prevention shows that the perceived social norm of one's sexual partner is a strong predictor of one's own condom use intention (Buunk *et al.*, *in press*). With respect to condom use, individuals appear to be highly sensitive to the wishes of their sex partner (Rademakers *et al.*, 1992). Moreover, they find it important to perceive support for condom use in their partner (Schaalma, Kok, Braeken, Schopman and Deven, 1991). Therefore, in addition to our suggestion that a change in the perceived social norm of friends may mediate the effect of prevalence information on intention to use condoms, it can also be argued that a change in the perceived social norm of future sexual partners will mediate this relationship.

In order to test the mediating role of the perceived social norm of friends and the perceived social norm of future sexual partners regarding condom use, two types of prevalence information were provided in the current study. Participants either received information about the safe sexual behavior of *men*, or about the safe sexual behavior of *women*. If the perceived social norm of future sexual partners operates indeed as the major mediator, it can be expected that information about the opposite sex will affect the intention to use condoms, whereas information about same sex others will not affect condom use intention. This prediction is based on the premise that, among heterosexuals, information about opposite sex others implies information about potential sexual partners. On the other hand, if the perceived social norm of friends operates as the most prominent mediator, a stronger effect can be expected of prevalence information about same sex others than about opposite sex others, because, in general, one's reference group is mainly constituted of same sex others.

Gender Differences

In general, research in the area of AIDS-preventive behavior shows strong gender differences. Especially noteworthy is that women, in comparison to men, hold a more positive attitude towards safe sex and condom use (Campbell, Peplau and DeBro, 1992; Rosenthal, Hall and Moore, 1992; Sacco, Rickman, Thomson and Levine, 1993), and have a stronger intention to use condoms (Buunk *et al.*, *in press*; Van Zessen and Sandfort, 1991). Moreover, people seem to be aware of this gender difference. There is evidence that both men and women believe that men are less willing to use condoms than women (*cf.* Buunk *et al.*, *in press*; Schaalma *et al.*, 1993). Therefore, it can be assumed that information about the high prevalence of safe sex among men will be more challenging to

both men's and women's initial belief than similar information about women. Consequently, it is predicted that information about the high prevalence of safe sex among men will have a more pronounced effect on both men's and women's intention to use condoms than such information about women (Hypothesis 1).

It seems likely that the effect of high prevalence information of safe sex among men will affect men and women through different processes. Women's intention will especially be affected by changes in the perceived social norm of male partners, whereas men's intention will especially be altered by changes in the perceived social norm of male friends. However, the perceived social norm of male sexual partners may be a more important determinant of women's condom use intention than the perceived social norm of male friends is of men's intention because women are more directly dependent upon the cooperation of the sexual partner than men because it is a behavior that he, rather than she, performs (Morrison, Rogers-Gillmore and Baker, 1995). Indeed, there is evidence that the belief that one cannot exert enough control over actual condom use behavior is a more important determinant of unsafe sexual behavior among women than among men (Galligan and Terry, 1993; Richard and Van der Pligt, 1991). In line with this reasoning, it is predicted that high prevalence information of safe sex among men has a more pronounced effect on women's than on men's intention to use condoms (Hypothesis 2). Moreover, it is predicted that this effect of prevalence information on women's intention will be mediated primarily by a change in the perceived social norm of future sexual partners (Hypothesis 3), whereas the effect on men's intention will be mediated primarily by a change in the perceived social norm of friends (Hypothesis 4).

In sum, the following hypotheses are tested: (1) information about the high prevalence of safe sex among men will have a more positive effect on the intention to use condoms than information about the high prevalence of safe sex among women, (2) information about the high prevalence of safe sex among men will have a stronger effect on women's than on men's intention to use condoms, (3) the effect of information about the high prevalence of safe sex among men on women's intention will be mediated primarily by the perceived social norm of future sexual partners, and (4) the effect of this information on men's intention will be mediated primarily by the perceived social norm of friends.

METHOD

Sample

The sample consisted of 165 undergraduate students, 90 male and 75 female students from the University of Nijmegen ($n=96$) and the 4-year Business College of Den Bosch ($n=69$), – two medium size cities in the Netherlands –, who voluntarily participated in this study. Because we were primarily interested in participants who expected to have new or casual sexual partners, the 72 respondents who indicated that they had a steady relationship and did not expect to have new or casual sexual partners in the next five years were removed from the sample. Furthermore, because the questionnaire was designed for heterosexual individuals, the three respondents who stated that they were gay or lesbian were excluded from analysis, as were the two respondents who initially estimated the prevalence of safe sex among students from their own city to be higher than 88%. This was done because the experimental manipulation contained the information that 88% of the students of their own city engage in safe sex, and the aim of this manipulation was to provide prevalence information of safe sex that was perceived to be high.

The final sample consisted of 88 students, 54 male and 34 female. The mean age was 23 years ($SD=2$). The average number of sexual partners in the past five years was 2.9 ($SD=3.5$). Male students reported considerably more sexual partners than female students ($M=3.7$ vs. $M=1.5$), $F(1, 87)=9.34$, $p<0.01$. Of the students who had engaged in sexual intercourse with a new or casual partner 70% reported not always having used a condom. There were no gender differences in past condom use ($F<1$). The intention to use condoms, however, differed for men and women, whereby male students reported a lower intention to use condoms than female students, $F(1, 86)=6.11$, $p<0.05$ ($M=5.11$ vs. $M=5.79$).

Procedure

The experiment was carried out in two different settings. Students from the University of Nijmegen were asked to participate while they were studying in the University Library. Students from the 4-year Business College of Den Bosch were asked to participate at the end of a class. The two experimental settings were alike, and yielded similar results.

Students were asked to fill out a questionnaire on opinions about safe and unsafe sexual behavior with respect to AIDS. A supervisor made sure that the questionnaires were filled out in private. The questionnaire consisted of three parts. The first part of the questionnaire contained several biographical and pre-test measures. The second part contained one of the experimental manipulations. Participants either received a bogus newspaper article on the sexual behavior of male or female students, or no newspaper article. In one experimental condition the newspaper article stated that research had shown that, in the preceding year, 88% of the *male* students from their own city had exclusively engaged in safe sex, and in the other experimental condition the article stated that, in the preceding year, 88% of the *female* students of their own city had exclusively engaged in safe sex. This percentage of 88% was derived from a study on the (un)safe sexual behavior of the Dutch population (Van Zessen and Sandfort, 1991), and has also been used in a previous study (see Van den Eijnden *et al.*, 1994). The third part of the questionnaire contained the post-test measures.

Design

The 88 undergraduate students were randomly assigned to either the "88% of *male* students have safe sex" – condition ($n=27$), the "88% of *female* students have safe sex" – condition ($n=40$), or to the control – condition ($n=21$). Because the experimental manipulations and the dependent variables were both included in the second questionnaire, we were not able to carry out a reliable manipulation check. In this experimental part of the study the effect of high prevalence information of safe sex on the intention to use condoms was examined.

Pre-Test Measures

Intention to use condoms. Respondents were asked "Do you think that, from this time on, you will always use a condom when having sexual intercourse with a new or casual partner?". This item was measured on a 7-point scale ranging from (1) absolutely not to (7) absolutely.

Post-Test Measures

Intention to use condoms. To prevent a practice effect, post-test intention was measured by different items than pre-test intention. First, participants were instructed to imagine themselves in the following situation: "You are enjoying an evening out with the person you have been in love with for quite some time now. At the end of the evening the person asks you to come over to his or her place to have one last drink. Once in the apartment, you almost immediately start kissing and fondling, and soon it becomes clear that you are going to have sex. You know that birth control is taken care of". Next, participants were asked (1) "Do you think you would use a condom?", (2) "Do you think you would use a condom if this new partner would tell you that he/she has hardly ever had unsafe sexual contacts?", and (3) "Do you think you would use a condom if this new partner would tell you that he/she prefers not to use a condom?". Again, these items were measured on a 7-point scale ranging from (1) absolutely not to (7) absolutely (Cronbach's $\alpha = 0.94$). An index of the intention to use condoms was computed by averaging the three scores on these items. To check if the presented scenario was perceived as realistic, subjects were asked if they could imagine themselves in this situation, and 92% reported that they could do this quite well, easily or very easily.

Perceived social norm of friends was measured by asking participants "How strongly would your friends disapprove if you would not use a condom when having sexual intercourse with a new or casual partner?", and answers ranged from (1) not at all to (5) very strongly.

Perceived social norm of future sexual partners was measured by asking participants "How strongly would a future sexual partner disapprove if you would not (want to) use a condom when having sexual intercourse?" with answers ranging from (1) not at all to (5) very strongly.

RESULTS

Intention to Use Condoms

It was predicted that information about the high prevalence of safe sex among men will have a more positive effect on the intention to use condoms than information about the high prevalence of safe sex among women (Hypothesis 1), and that prevalence information about men will have a stronger effect on women's than on men's intention to use condoms (Hypothesis 2). An ANCOVA was conducted with prevalence information (88% of men have safe sex, 88% of women have safe sex, no information) and gender as factors, and pre-test intention as a covariate. Pre-test intention was entered as a covariate, because initial differences in intention were found between women in the three conditions, $F(2, 82) = 3.02, p < 0.05$. This ANCOVA yielded a significant main effect of prevalence information, $F(2, 81) = 3.38, p < 0.05$. Subsequent analyses in which simple contrasts between the different groups were tested showed, as predicted, that information about the safe sexual behavior of men had a more positive effect on intention to use condoms ($M_{\text{adj}} = 5.78$), than information about the safe sexual behavior of women ($M_{\text{adj}} = 5.05$), $F(1, 62) = 7.62, p < 0.01$. No significant differences were found between the control group ($M_{\text{adj}} = 5.25$) and the "88% of men have safe sex" group, $F(1, 43) = 2.02, ns$, and the control group and the "88% of women have safe sex" group ($F < 1$). Furthermore, a significant main effect of gender was found, $F(1, 81) = 8.69, p < 0.01$, in which female

respondents expressed a stronger intention to use condoms than male respondents ($M_{\text{adj.}} = 5.74$ vs. $M_{\text{adj.}} = 4.98$).

There was no significant interaction between prevalence information and gender ($F < 1$). However, given the explicit prediction for women, a subsequent analysis was conducted in which the effect of prevalence information was tested for men and women separately. This analysis showed a marginally significant effect of prevalence information among women, $F(2, 81) = 2.62$, $p < 0.08$, but not among men ($F < 1$) (see Figure 1). Subsequent analysis in which simple contrasts were tested showed, as predicted, that women who received the information that most men have safe sex had a stronger intention to use condoms ($M_{\text{adj.}} = 6.37$) than women who received this information about women ($M_{\text{adj.}} = 5.35$), $F(1, 62) = 5.74$, $p < 0.01$. No statistically significant differences were found between women in the control condition ($M_{\text{adj.}} = 5.51$) and women in the two experimental conditions ("88% of men have safe sex" vs. control group: $F(1, 43) = 2.02$, *ns*; "88% of women have safe sex" vs. control group: $F < 1$).

To conclude, it was predicted that information about the high prevalence of safe sex among men would have a more positive effect on the intention to use condoms than similar information about women, and that information about men would have a stronger effect on women's than on men's intention to use condoms. The present findings partially supported these predictions. In comparison to information about women, information about the high prevalence of safe sex among men had a more positive effect on the intention to use condoms, and some suggestive evidence was found that this effect occurred especially among women.

Perceived Social Norm of Future Sexual Partners

Next the prediction was tested that the effect of prevalence information about men on women's intention to use condoms is mediated by the perceived social norm of future



Figure 1 The effect of gender specific prevalence information of safe sex on women's and men's intention to use condoms.

sexual partners (Hypothesis 3). To test this mediating effect a MANCOVA was conducted with type of prevalence information (88% of men have safe sex, 88% of women have safe sex, no information) and gender as factors, perceived social norm of future sexual partners and intention to use condoms as dependent variables, and pre-test intention as a covariate. First, the effect of both factors on the perceived social norm of future partners was tested. Second, by means of a stepdown procedure, the effect of both factors on intention to use condoms was tested, controlling for the covariance of perceived social norm of future sexual partners and intention.

The first part of the analysis yielded a marginally significant effect of type of prevalence information on the perceived social norm of future sexual partners, $F(2, 81) = 2.97$, $p < 0.06$, but no significant effect of gender, $F(1, 81) = 2.16$, *ns*, and no interaction between prevalence information and gender, $F(2, 81) = 1.25$, *ns*. Nevertheless, to obtain more insight into the effects among men and women, the effect of prevalence information was tested for men and women separately. A main effect of prevalence information was found for women, $F(2, 81) = 3.04$, $p < 0.05$, but not for men ($F < 1$). As was predicted, women perceived a stronger social norm of future sexual partners following prevalence information about men ($M_{\text{adj.}} = 4.13$) than following prevalence information about women ($M_{\text{adj.}} = 3.27$), $F(1, 62) = 4.18$, $p < 0.05$, or following no information ($M_{\text{adj.}} = 2.99$), $F(1, 43) = 3.95$, $p < 0.05$ (see Figure 2). Women who received information about women did not differ from women who received no information, $F(1, 57) = 1.53$, $p = ns$.

The second part of this analysis, the stepdown procedure, showed that the earlier mentioned significant effect of prevalence information on intention to use condoms declined to a level below significance when controlling for the influence of perceived social norm of future sexual partners, $F(2, 81) = 2.37$, $p < 0.11$. Further analysis revealed that the marginally significant effect of prevalence information on women's intention to use condoms declined to an insignificant level when controlling for perceived social norm of future sexual partners, $F(2, 81) = 1.59$, $p < 0.21$. Thus, it seems that the positive effect of

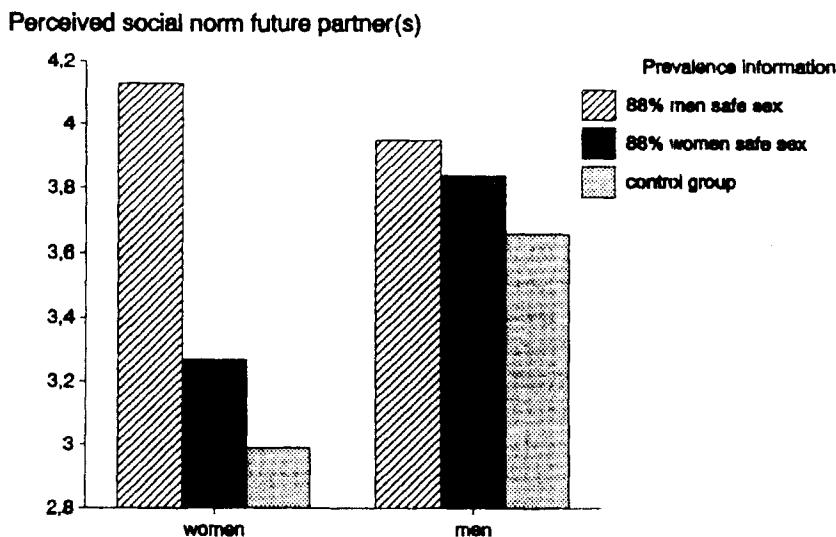


Figure 2 The effect of gender specific prevalence information of safe sex on women's and men's perceived social norm of future sexual partners.

prevalence information about men on women's intention to use condoms is in part mediated by an increase in the perceived social norm of future sexual partners.

In sum, these results suggest that upon receiving information that most men have safe sex, women perceived the social norm of future sexual partners to be supportive of condom use. Moreover, the results confirm our prediction that the increase in women's intention to use condoms following high prevalence information of safe sex among men is mediated by their perceived social norm of future sexual partners.

Perceived Social Norm of Friends

It was expected that an effect of gender specific prevalence information on men's intention to use condoms would be mediated by the perceived social norm of friends (Hypothesis 4). However, men's intention to use condoms was not affected by prevalence information of safe sex, indicating that no mediating effect could have occurred. Nevertheless, for exploratory reasons the effects of prevalence information and gender on the perceived social norm of friends were tested. Thus, as before, a MANCOVA was conducted with prevalence information and gender as factors, and with perceived social norm of friends as dependent variable, and pre-test intention as a covariate. This analysis yielded no significant main effect of prevalence information, $F(2, 81) = 1.92$, *ns*, no effect of gender, $F(1, 81) = 2.58$, *ns*, and no interaction between prevalence information and gender ($F < 1$). Moreover, testing the effect of prevalence information for men and women separately showed no effect for men ($F < 1$), and no effect for women ($F(2, 81) = 1.66$, *ns*). However, a test of simple contrasts between groups yielded a marginally significant difference between women in the "88% of men have safe sex" condition and the control condition, $F(1, 43) = 3.42$, $p < 0.07$. Women seem to perceive a somewhat higher condom-supporting social norm among friends following the "88% of men have safe sex" information ($M_{\text{adj.}} = 4.00$), than following no information ($M_{\text{adj.}} = 3.14$).

In sum, contrary to the predictions, these results indicate that the information that most men have safe sex has no effect on men's perceived social norm of friends. However, high prevalence information of safe sex among men seems to somewhat increase women's perceived social norm of friends.

DISCUSSION

The present study examined the effect of information that most men or the information that most women engage in safe sex on the intention to use condoms. Furthermore, it investigated to what extent the effect of gender specific prevalence information on the intention to use condoms was mediated by the perceived social norm of friends, and the perceived social norm of future sexual partners. As was predicted, the results showed that information about the high prevalence of safe sex among men had a positive effect on the intention to use condoms, whereas similar information about women did not (Hypothesis 1). Moreover, in line with the predictions, some evidence was found that information about the high prevalence of safe sex among men seemed to increase women's but not men's intention to use condoms (Hypothesis 2). More specifically, information about men seemed to have a more positive effect on women's intention to use condoms than information about women. Furthermore, as was hypothesized, some evidence was found that this effect was mediated by the perceived social norm of future sexual partners (Hypothesis 3). However,

the prediction that the effect of prevalence information on men's intention would be mediated by the perceived social norm of friends could not be confirmed (Hypothesis 4).

The results of the present study suggest that information about the high prevalence of safe sex among men is a stronger challenge to people's initial beliefs than similar information about women. Furthermore, this information seems to be especially challenging to women's rather than men's belief system. Indeed, as stated before, there is some empirical evidence supporting the assumption that the information that most men engage in safe sex is more surprising to people than similar information about women. As was shown by earlier research, men are less willing to use condoms than women (Buunk *et al.*, in press; Van Zessen and Sandfort, 1991) and both men and women are aware of this gender difference in the willingness to engage in AIDS-preventive behavior (cf. Buunk *et al.*, in press; Schaalma *et al.*, 1993). However, there is little empirical support for the assumption that high prevalence information is more challenging to women's than to men's initial ideas. A previous study showed that men and women do not differ in their perceived prevalence of unsafe sexual behavior among men (Van den Eijnden and Buunk, 1996). Therefore, it seems more plausible that the information that most men have safe sex is more appreciated by women, because, for instance, women are more dependent on the cooperation of their sexual partner to actually use a condom than men are. This assumption is supported by the finding that the impact of information about the prevalence of safe sex among men on women's intention to use condoms is mediated by a change in women's perceived social norm of future partners. In sum, high prevalence information of safe sex among men seems to increase women's expectation that future sexual partners will approve of safe sex and will cooperate in AIDS-preventive precautions. It seems likely that this stronger intention results from the fact that women will find it more easy to discuss condom use when they expect their partner to approve of safe sex. The present study did not provide data to test this particular assumption directly, i.e. no information was gathered on the perceived control or the self-efficacy of participants. Therefore, to identify whether or not providing high prevalence information of safe sex among men lead women to consider the ease or difficulty of discussing condom use, in future research a cognitive response analysis technique may be employed, for example by asking participants to retrospectively list the thoughts they had while reading the prevalence information.

The results of this study do not support the predictions formulated for men. The expectation that information about the safe sexual behavior of men would increase the intention to use condoms among men was not confirmed. Neither was there any support for the prediction that prevalence information about safe sex among men would enhance men's perceived social norm of friends. These results are quite noteworthy, because they show that, even though men's intention to use condoms is relatively low, the information that most people have safe sex does not have any effect on their intention to use condoms or their perceived social norms. As was theorized before, in comparison to women, men may be less responsive to information about the high prevalence of safe sex among opposite sex others, because when using a condom, men are less dependent upon the cooperation of their sexual partner. However, a second mechanism may underlie men's resistance to prevalence information about both men and women. As has been stated before, men are less willing to use condoms than women (Van Zessen and Sandfort, 1991). Moreover, men believe more strongly than women that condoms interfere with their sexual pleasure (Steward, DeForge, Hartmann and Kaminski, 1991). It can be argued that men's resistance to prevalence information may reflect a lower motivation to change their unsafe sexual behavior.

Four final remarks should be made. Firstly, it should be noted that women who received information about the safe sexual behavior of men did not have a significantly higher intention to use condoms than women who received no prevalence information. We believe that the absence of a significant difference between these two groups, at least to a certain extent, was the result of the relatively low number of participants in the control condition. Secondly, the design of this particular study did not allow us to carry out a reliable manipulation check. Thirdly, it must be noted that a more impressive test of our hypotheses would have been the inclusion of two more conditions in which respondents were given the information that only 12% of the men or women of their reference group engage in safe sex. In line with our hypotheses we would expect that low prevalence information of safe sex among men would reduce the intention to use condoms and the subjective norm of future sexual partners among women. Additional research is needed to address this analogous hypothesis. Finally, it should be noted that this study does not provide information about the effect of more frequent exposure to prevalence information. One might assume that real life health education interventions will be presented more than once. Therefore, the ecological validity of the present study may be limited.

The results of this study have both theoretical and practical implications. Theoretically, this study provides more insight into an important mechanism underlying women's increased intention to use condoms following high prevalence information of safe sex. The information that most people have safe sex seems to raise women's expectation that future sexual partners will have a positive attitude towards safe sex, and thereby stimulates women's intention to use condoms. Also, this finding may have important practical implications, for it shows that women can be motivated to use condoms by reinforcing their belief that their future sexual partners will approve of condom use. In line with earlier research (Galligan and Terry, 1993; Richard and Van der Pligt, 1991; Sobo, 1993) the present research indicates that health education campaigns should focus on bolstering sexual assertiveness among women, and on increasing men's awareness of their personal responsibility in taking AIDS-preventive precautions.

Furthermore, implications for future AIDS-preventive research are provided by the finding that men and women respond differently to gender specific prevalence information of safe sex. The present study suggests that men and women may respond differently to information about the number of people engaging in AIDS-preventive behavior. Therefore, it seems worthwhile to put more effort into investigating and designing gender specific AIDS-preventive interventions.

References

- Aronson, E. (1992) *The social animal*. San Francisco: Freeman.
- Buunk, B.P., Bakker, A.B., Siero, F.W. and Van den Eijnden, R.J.J.M. (in press). Predictors of AIDS-preventive behavioral intentions among adult heterosexuals at risk for HIV-infection: Extending current models and measures. *AIDS Education and Prevention*.
- Campbell, S.M., Peplau, L.A. and DeBro, S.C. (1992) Women, men, and condoms: Attitudes and experiences of heterosexual college students. *Psychology of Women Quarterly*, 16(3), 273-288.
- De Wit, J.B.F., Kok, G., Timmermans, C.A.M. and Wijnsma, P. (1990) Determinanten van veilig vrijen en condoomgebruik bij jongeren. *Gedrag en Gezondheid*, 18, 121-133.
- Deutsch, M. and Gerard, H.B. (1955) A study of normative and informational social influence upon individual judgement. *Journal of Abnormal and Social Psychology*, 51, 629-636.
- Festinger, L. (1954) A theory of social comparison processes. *Human Relations*, 7, 117-140.
- Fisher, J.D. and Misovich, S. (1990) Social influence and AIDS-preventive behavior. In J. Edwards, R. Scott Tindale, L. Heath, and E.J. Posavac (Eds.) *Social influence processes and prevention* (pp. 39-70). New York: Plenum.
- Forsyth, D.R. (1990) *Group Dynamics*. Pacific Grove, CA: Brooks/Cole.

- Galligan, R.F. and Terry, D.J. (1993) Romantic ideals, fear of negative implications, and the practice of safe sex. *Journal of Applied Social Psychology*, 23, 1685–1711.
- Kelley, H.H. (1952) Two functions of reference groups. In G.E. Swanson, T.M. Newcomb and E.L. Hartley (Eds.). *Reading in social psychology*. New York: Holt.
- Morrison, D.M., Rogers-Gillmore, M. and Baker, S.A. (1995) Determinants of condom use among high-risk heterosexual adults: A test of the theory of reasoned action. *Journal of Applied Social Psychology*, 25(8), 651–676.
- Rademakers, J., Luijckx, J.B., Van Zessen, G., Zijlmans, W., Straver, C. and Van der Rijt, G. (1992) *AIDS-preventie in heteroseksuele contacten: Risico-inschatting, voornemen en interactie*. Amsterdam: Swets and Zeitlinger.
- Richard, R. and Van der Pligt, J. (1991) Factors affecting condom use among adolescents. *Journal of Community and Applied Social Psychology*, 1, 105–116.
- Rosenthal, D.A., Hall, C. and Moore, S.M. (1992) AIDS, adolescents, and sexual risk taking: A test of the Health Belief Model. *Australian Psychologist*, 27(3), 166–171.
- Sacco, W.P., Rickman, R.L., Thompson, K. and Levine, B. (1993) Gender differences in AIDS-relevant condom attitudes and condom use. *AIDS Education and Prevention*, 5(4), 311–326.
- Schaalma, H.P., Kok, G.J. and Peters, L. (1993) Determinants of consistent condom use by adolescents: The impact of experience with sexual intercourse. *Health Education Research*, 8, 255–269.
- Schaalma, H.P., Kok, G.J., Braeken, D., Schopman, M. and Deven, F. (1991) Sex and AIDS education for adolescents. *Tijdschrift voor Seksuologie*, 15, 140–149.
- Sobo, E.J. (1993) Inner-city woman and AIDS: The psycho-social benefits of unsafe sex. *Culture, Medicine, and Psychiatry*, 17(4), 455–485.
- Stewart, D.L., DeForge, B.R., Hartmann, P. and Kaminski, M. (1991) Attitudes towards condom use and AIDS among patients from an urban family practice center. *Journal of the National Medical Association*, 83(9), 772–776.
- Suls, J. and Wills, T.A. (Eds.) (1991) *Social comparison: Contemporary Theory and Research*. Hillsdale, NJ: Erlbaum.
- Van den Eijnden, R.J.J.M., Buunk, B.P., Plaggenborg, I.E. and Hoorens, V. (1994) Informatie over seksueel gedrag van anderen en de intentie tot veilig vrijen. In P.A.M. Van Lange, F.W. Siero, B. Verplanken and E.C.M. Van Schie (Eds.). *Toegepaste sociale psychologie*, pp. 2–15, Delft: Eburon.
- Van den Eijnden, R.J.J.M. and Buunk, B.P. (1996) [Differential construal and prevalence estimates of unsafe sex]. Unpublished raw data.
- Van Zessen G. and Sandfort Th. (1991) *Seksualiteit in Nederland: seksueel gedrag, risico en preventie van aids*. Amsterdam/Lisse: Swets and Zeitlinger.
- Winslow, R.W., Franzini, L.R. and Hwang, J. (1992) Perceived peer norms, casual sex, and AIDS risk prevention. *Journal of Applied Social Psychology*, 22(23), 1809–1827.

Author notes

This research was financially supported by grant no. 91-52 from the Dutch Ministry of Welfare, Health and Cultural Affairs (WVC). The authors thank Sarynina Nieuweboer for her helpful comments.

APPENDIX

The following article has recently been published in a local newspaper:

88% Of the male students engage in safe sex

From a reporter

Groningen

Recently, an investigation has been conducted on the sexual behavior of students in the city of Groningen. The main aim for investigating

students current behavior was to improve AIDS-preventive programs directed at students. Over a thousand students belonging to a representative sample of the student population, were questioned about their sexual experiences and behaviors. The investigation yielded a number of meaningful results. For instance, it showed that a majority of the male students from Groningen engages in safe sex. In the year preceding the investigation, 88% of the male students from Groningen had exclusively engaged in safe sex. One of the investigators, Dr. J. van Dam, referred to this finding as a remarkable outcome. He stated that earlier research had already shown that relatively many students engage in safe sex. He furthermore stated that he had been somewhat surprised by this high percentage. However, the investigation has been carried out adequately. Therefore the results, have to be taken seriously, he commented.