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Sex Differences in Emotional and Behavioral Responses to HIV+ individuals' Expression of Distress

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Abstract

Two studies examined the influence of HIV+ individual's expression of distress on perceivers' emotional and behavioral reactions. In Study 1 (N = 224), HIV+ individuals' expression of distress was experimentally manipulated by means of vignettes. Men and women reacted differently when persons with HIV conveyed distress: women reported stronger feelings of pity, whereas men reported stronger feelings of anger. Study 2 (N = 136) replicated this study in a realistic experimental setting with additional behavioral measures. Similarly, women reported stronger pro-social behavior than men when confronted with a person with HIV who conveyed distress. Results of the present study shed additional light to the self-presentational dilemma of ill persons. Conveying moderate levels of distress may evoke prosocial responses in women, but not in men.

Sex Differences in Emotional and Behavioral Responses to HIV+ individuals' Expression of Distress

Persons who suffer from a life-threatening disease may face a so-called self-presentational dilemma (Silver, Wortman & Crofton, 1990). On the one hand, they have to convey distress to motivate others to give social support. On the other hand, patients may receive negative emotional or behavioral reactions when they confront others with their suffering. This dilemma of whether or not to communicate distress to others, may present an especially strong conflict for persons with HIV, a medical condition that is associated with relatively extreme negative emotional reactions and stigmatization. These negative social responses, resulting from both distress communication and the nature of HIV, may have detrimental consequences for personal and social relationships (Herek, 1999; Leary & Schreindorfer, 1998) and may also have a negative impact on the psychological well-being of persons with HIV (Crandall & Coleman, 1992; Flowers, Davis, Hart, Rosengarten, Frankis & Imrie, 2006; Herek, 1999; Major & O'Brien, 2005).

Why do people stigmatize persons with HIV? Research in the field of illness cognition has revealed that lay people generally interpret diseases in terms of *contagiousness* and *seriousness* (Bishop, 1991a, 1991b), and that HIV is grouped among the contagious and serious medical conditions. Both illness cognitions seem to have a negative impact on perceivers' emotional and behavioral reactions. Perceived contagiousness of disease is related to stronger feelings of fear and stronger stigmatization (Dijker, Koomen & Kok, 1997; Dijker & Raeijmaekers, 1999; Herek, 1999). Perceived seriousness of disease is associated with relatively stronger feelings of both fear and pity (Dijker & Koomen, 2003) and stronger stigmatization (Crandall, Glor & Britt, 1997; Crandall & Moriarty, 1995). Another factor that determines emotional and behavioral reactions to persons with HIV is *personal responsibility* for contracting the HIV infection. Higher personal responsibility (e.g. HIV caused by unsafe

sex versus HIV caused by blood transfusion) is related to less feelings of pity, stronger feelings of anger and stronger stigmatization (Crocker, Major & Steele, 1998; Weiner, Perry & Magnusson, 1988). Finally, negative reactions towards persons with HIV often symbolize negative attitudes towards groups that are associated with HIV, such as homosexuals or intravenous drug users (Bos, Kok & Dijker, 2001; Herek & Capitanio, 1998; Pryor, Reeder, Yeadon & Hesson-McInnis, 2004; Reeder & Pryor, 2000).

Interpersonal consequences of conveying distress

Persons with HIV face the challenge to solicit supportive responses and to minimize negative social reactions. Research on helping behavior suggests that perceivers have to notice signals of distress before they can recognize a need for help. In particular, clear distress cues increase the likelihood that perceivers interpret the situation as requiring assistance and may lead to more help (see Schroeder, Penner, Dovidio & Piliavin, 1995). However, if victims convey too much distress, perceivers tend to reject and stigmatize them (Silver et al., 1990). Batson, Early and Salvarani (1997) found that watching another person in distress may cause both feelings of empathy and personal distress in perceivers, depending on their perspective. Empathy can be defined as an other-oriented emotional reaction (similar to pity) that evokes an altruistic motivation to alleviate the other's distress. Personal distress can be described as a self-oriented negative emotional reaction (similar to fear) that evokes an egoistic motivation to relieve one's own distress. Thus, both empathy and personal distress may evoke prosocial behavior in perceivers, resulting, however, from different motivational mechanisms. On the basis of the above-mentioned studies, one could predict that ill persons who convey a moderate level of distress, might evoke prosocial behavior in perceivers.

Silver and colleagues (1990) examined the effect of coping self-presentation of female breast cancer patients on social support provision and negative reactions from others. They assumed that perceivers would react more negatively towards patients who coped poorly with

their disease and conveyed high levels of distress, compared to patients in the other conditions. Indeed, respondents felt less attracted to this target, sat at greater distance from her, reported more distress following the interaction and reported less desire for future interaction. Conversely, Silver et al. (1990) predicted that perceivers would react positively to a target who indicated that she was coping well with her disease. As predicted, this 'good coping' self-presentation was judged positively on almost all outcome measures. Interestingly, Silver et al. (1990) expected that a 'balanced coping' portrayal, a combination of conveying distress and indicating that one is coping well, would also result in favorable reactions from perceivers. Indeed, participants who were confronted with a 'balanced coping' portrayal reacted positively on all outcome measures. Finally, it was assumed that perceivers would react negatively towards patients who did not provide information about their coping activities. An explanation would be that perceivers in this condition would use their (negative) stereotypes about victims. In fact, when no information about coping activities was provided, perceivers' reactions were similar to the reactions to the target who coped poorly and conveyed high levels of distress.

Although the Silver et al. (1990) study is an important step towards better understanding the interpersonal consequences of self-presentational strategies of patients, some critical remarks should be made. First, the pure effect of 'conveying distress' on perceivers' reactions is still unclear. The target in Silver et al.'s poor coping condition not only conveyed distress, but also displayed feelings of jealousy and difficulty relating to others. It is still unclear to what extent respondents reacted negatively because of targets' distress or because of those other negative aspects. Second, the generalization of the results seems limited. The participants in this study were students and the study has never been replicated for other diseases. Moreover, Silver et al. (1990) did not investigate reactions of male participants towards patients' coping self-presentation. In fact, their study only provides

information about women's reactions to coping of female patients with cancer. However, we have well-founded reasons to assume that the interpersonal consequences of coping may be different for men and women.

Sex differences in emotional reactions and prosocial behavior

Communication with persons who suffer from a life-threatening disease, may require skills such as emotional sensitivity, caring and concern for others. These role requirements are generally seen as belonging more to the female gender role than to the male gender role (Eagly & Crowley, 1986; Eagly & Wood, 1991). There is empirical evidence that women and men do differ in their emotion expression and in their helping behavior. In general, women are found to be more emotionally expressive than men (Kring & Gordon, 1998; Timmers, Fischer & Manstead, 1998), with the exception of expressing anger (Grossman & Wood, 1993). In addition, Grossman and Wood (1993) found that people's stereotypic judgments about gender and emotional experience were in line with these results: Participants thought that typically women generally experience emotions more intensely than men, with the exception of anger. A meta-analysis of Eagly and Crowley (1986) shows that men and women also differ in their helping behavior. The female gender role encourages helping behavior that is caring and nurturing, whereas the male gender role stimulates helping behavior that is heroic and chivalrous.

These sex differences in emotional expressions and helping behavior can be explained by social role theory (Eagly, 1987; Eagly & Crowly, 1986; Eagly & Wood, 1991). This theory postulates that sex differences in social behavior are in part caused by people's tendency to behave consistently with their gender roles. In addition, sex differences may also stem from differences in skills and attitudes derived from men's and women's prior role enactment. The female gender role consists of communal attributes, such as being emotional expressive, friendly, nurturing, altruistic, interpersonally sensitive and caring for others. The male gender

role consists of agentic qualities, such as being independent, assertive, masterful, self-confident, dominant and instrumentally competent (Eagly & Wood, 1991).

In general, we expect that men and women will react differently to patients who display distress. We expect that patients who convey distress evoke prosocial reactions in women, because this appeals more to the communal qualities of the female gender role. On the other hand, we expect that men react negatively to patients who convey distress, because this appeals to behavior that is inconsistent with their male gender role.

The present studies

The present studies examine the interpersonal consequences of HIV+ individual's expression of distress, using different research methods and a variety of outcome measures. Study 1 investigated the influence of expression of distress on perceivers' emotional and behavioral reactions, using a vignette technique. Study 2 was a replication of the first study in a realistic experimental setting, using additional behavioral measures.

Study 1

In the present study we investigate the effects of expression of distress (*conveying distress, conveying no distress,* and *no information*) and perceivers' sex on emotional reactions to an HIV+ person. Minimal research has been conducted on the interpersonal consequences of HIV+ individual's expression of distress. Therefore, it is important to examine whether our manipulations interact with other factors that are known to be related to perceivers' reactions to persons with HIV. For this reason, personal responsibility and seriousness of disease were manipulated as well. On the basis of research in the field of sex differences in emotions (Grossman & Wood, 1993; Kring & Gordon, 1998; Timmers et al., 1998), we predict that women will react with stronger feelings of pity to persons with HIV who convey distress, whereas men will respond with stronger feelings of anger.

Method

Participants

Two hundred twenty-four students of senior secondary vocational education (127 men and 96 women) participated in this study. The sex of one participant was unknown. The mean age of the participants was 18.4 years (*SD* = 1.2). Five participants were excluded from data-analysis, because they indicated not to have participated seriously[1].

Procedure

The experiment was conducted during class in the presence of the teacher and the experimenter. The experimenter explained that every participant would receive a scenario and several questions about a situation in a particular workplace. It was pointed out that participants should read the scenario carefully and try to imagine this situation. Twelve different versions of the booklet were distributed at random. After the data collection participants were debriefed.

The study consisted of a 3 (Coping with HIV: active coping vs. conveying distress vs. no information) x 2 (Sex of participant: male vs. female) x 2 (Seriousness: low vs. high) x 2 (Personal responsibility: low vs. high) between-subjects design.

Scenario

The booklet first provided a detailed description of the situation. Participants had to imagine that their company merged with another company. As a result, they would have to share their office and collaborate with a new colleague (Michael Severijns)[2], who used to work for the other company. Participants had to imagine that one of their present colleagues showed them an interview with Michael in a recent issue of the hospital magazine. The next page of the booklet consisted of this interview with Michael. In the introduction of the interview, it was clearly stated that Michael was infected with HIV and that he regularly

visited the HIV department in the hospital. Then, Michael was asked to tell something about himself. He provided general background information about his neighbourhood, hobbies, work and relationship status (living together with his girlfriend)[3], and confirmed that he was infected with HIV. Subsequently, the interviewer asked how he was infected with HIV. The answer to this question contained our manipulation of *personal responsibility* for the onset of the disease. In the high personal responsibility condition, Michael had had unsafe sex with a woman at the time of his practical training in Kenya, despite the fact that he was warned for the possible negative consequences of unsafe sex. In the low personal responsibility condition, Michael had had safe sex with the same woman, but found out afterwards that the condom was ripped. Then, the interviewer informed about the actual medical situation of Michael. The answer to this question was the manipulation of *seriousness of disease*. In the high seriousness condition, Michael told that recent blood results showed that his medical condition was deteriorating. In addition, Michael reported that he suffered from diarrhoea and had become skinny. In the low seriousness condition, Michael told that recent blood results indicated that his medical condition was fairly good. Michael also stated that he had no disease symptoms and he generally felt well.

Finally, the interviewer asked how Michael was coping with his HIV infection. The answer to this question contained the manipulation of *expression of distress*. In the distress condition, Michael responded as follows: “I constantly realize that I’m in a terrible situation. After all, you have a disease that may not be cured. It was a smack in the face when I heard about my HIV infection, and I still cannot accept my disease. It seems a hopeless situation and I often feel depressed and sad”. In the no distress condition, Michael answered: “I try to cope actively with my HIV infection. I’m having the combination therapy and I swallow a combination of AIDS inhibitors at particular moments during the day. I also try to eat healthy food and take enough rest. I try to continue with my life as normal as possible and I do my

best to cope actively with my disease". The question how Michael was coping with his HIV infection was not asked in the control condition.

Dependent variables

After reading the scenario, participants answered questions about their emotional reactions to the imagined cooperation with the target. All answers were measured on a 7-point scale (1 = not at all, 7 = very much). *Fear* was measured by combining the scores of three items, reflecting different Dutch words with the meaning of fear (Cronbach's alpha = .91). *Pity* was measured by combining the scores on four items with the Dutch meaning of pity (Cronbach's alpha = .79). *Anger* was measured by combining the scores on the items irritation and annoyance (Cronbach's alpha = .79).

Results

Manipulation checks

Eight questions checking the effectiveness of our four manipulations were answered. Each manipulation check consisted of the combination of the scores on two questions (Cronbach's alpha's between .67 and .87). Each of the manipulation checks was subjected to a 3 (Expression of distress: distress vs. no distress vs. no information) x 2 (Sex of participant: male vs. female) x 2 (Seriousness: low vs. high) x 2 (Personal responsibility: low vs. high) analysis of variance (ANOVA). All analyses revealed the expected main effects. First, respondents in the high personal responsibility condition thought that the target had higher personal responsibility (M = 6.22) than respondents in the low personal responsibility condition (M = 3.53), $F(1, 221) = 192.88$, $p < .001$. Second, respondents in the high seriousness condition indicated that the medical situation of the target was more serious (M = 4.62) than respondents in the low seriousness condition (M = 2.97), $F(1, 221) = 121.75$, $p < .001$. Third, the target was judged as conveying more distress in the distress condition (M = 3.62) than in the no information condition (M = 3.37) or the no distress condition (M = 2.67),

$F(2, 221) = 9.65$, $p < .001$. Post hoc analyses show that the differences between the distress condition and the other two conditions are significant. In sum, we conclude that our experimental manipulations have been induced successfully.

Emotional reactions

A 3 x 2 x 2 x 2 (expression of distress x sex of participant x seriousness x personal responsibility) ANOVA on feelings of fear revealed a significant main effect for sex of participant, $F(1, 220) = 6.16$, $p < .05$. Women reported stronger feelings of fear ($M = 3.44$) than men ($M = 2.91$). No other significant main effects were found.

A similar ANOVA on feelings of pity revealed a significant main effect for sex of participant as well, $F(1, 220) = 4.40$, $p < .05$. Women reported stronger feelings of pity ($M = 4.90$) than men ($M = 4.58$). In addition, a significant main effect for expression of distress was found, $F(2, 219) = 3.15$, $p < .05$. Post hoc analyses revealed that respondents in the conveying distress condition report stronger pity ($M = 5.01$) than respondents in the no information condition ($M = 4.59$). No other significant main effects were found. However, two significant interaction effects showed up. An interaction between expression of distress and personal responsibility ($F(2, 219) = 5.22$, $p < .01$) indicates that perceivers respond with relatively little pity to highly responsible patients who convey no distress. An interaction between expression of distress and seriousness of disease ($F(2, 219) = 3.05$, $p < .05$) shows that participants also respond with relatively little pity to patients in a highly serious medical condition who convey no distress.

An ANOVA on feelings of anger did not reveal a significant main effect for sex, although the pattern was in the expected direction, $F(1, 222) = 2.57$, $p = .11$. However, the ANOVA revealed a significant interaction between patients' expression of distress and sex of the participant, $F(2, 221) = 4.65$, $p < .05$, indicating that men and women react differently to ill persons who convey distress: Men report relatively stronger feelings of anger, whereas

women report relatively less feelings of anger. No other main or interaction effects were found.

Our specific hypotheses with regard to sex differences in emotional reactions to patients' conveying distress were tested with a priori contrast analyses (separately for men and women). We tested the effect of 'conveying distress' on emotional reactions in male and female perceivers, by comparing the distress condition with the other two conditions. The weight '-2' was assigned to the distress condition and the weight '1' was assigned to the other conditions. Table 1 shows that men respond with stronger feelings of anger to a target who is conveying distress. On the other hand, women respond with stronger feelings of pity. Our predictions with regard to sex differences were confirmed: conveying distress leads to a more pro-social emotional state in women, but causes a more aggressive emotional state in men.

Discussion

Study 1 investigated emotional reactions to patients' expression of distress and particularly sex differences in these reactions. In line with research on sex differences in emotional expression (Grossman & Wood, 1993; Kring & Gordon, 1999; Timmers et al., 1998), we found that women reported stronger feelings of fear and pity than men. Men also reported stronger feelings of anger than women, although this effect did not reach significance.

Ill persons who convey distress seem to evoke different emotional reactions in men and women: Women report stronger feelings of pity, whereas men respond with stronger feelings of anger. This pattern is consistent with the predictions that we derived from social role theory (Eagly, 1987; Eagly & Wood, 1991) and research in the field of sex differences in emotions (Grossman & Wood, 1993; Kring & Gordon, 1998; Timmers et al., 1998). In contrast to Silver et al. (1990) who investigated reactions of female perceivers to coping self-presentation of breast cancer patients, we did find that conveying distress results in favorable

reactions in female perceivers. We have two different explanations for this discrepancy: First of all, our manipulation of conveying distress was not mixed with other negatively valued aspects as in the manipulation of Silver et al. (1990). Thus, it might be possible that conveying relatively pure distress indeed results in positive reactions. Second, the different results can also be explained by differences in perspective taking (Batson et al, 1997). Respondents in the Silver et al. (1990) study may have identified stronger with the disease (prevalent female disease versus less prevalent disease) than respondents in our study. As a consequence, it is quite possible that respondents in the Silver et al. (1990) study imagined how *they* would have felt in that situation, while our respondents imagined how the *other person* would have felt. The latter form of perspective taking predominantly causes empathy in perceivers, whereas the first form not only causes empathy, but also leads to distress in perceivers (see Batson et al., 1997).

The present study also examined whether and how personal responsibility and seriousness of disease interact with patients' expression of distress. It seems that 'conveying no distress' leads to less pity, when ill persons are highly responsible for the onset of their disease, and when their medical condition is serious. It seems that perceivers consider patients' conveying distress as more appropriate when the medical condition is more serious. This fit between patients' expression of distress, on the one hand, and personal responsibility and seriousness of disease, on the other hand, only seems to determine perceivers' feelings of pity, and not feelings of fear or anger.

The present study has investigated perceivers' emotional reactions to patients' expression of distress. The results of this study show that female perceivers respond with stronger pro-social emotions to persons with HIV who convey distress, whereas male perceivers react with stronger emotions of a more aggressive nature. However, some questions remain unanswered and some limitations of this study should be mentioned. First of

all, we used a vignette methodology. Although we are confident that our vignettes were realistic and vivid, it is still unclear whether perceivers would respond similarly in a realistic experimental setting. Second, we only measured emotional reactions to patients' expression of distress. Thus, it remains unclear if patients' expression of distress is also related to sex differences in perceivers' *behavioral* reactions. Third, reactions to persons with HIV were not compared with reactions to a healthy target. Fourth, participants were students of senior secondary vocational education. Therefore, the ecological validity of the results is limited. Our second study takes the above-mentioned limitations into account.

Study 2

The second study replicated the second study in a realistic setting. Participants were invited to our laboratory for a study on 'cooperation and first impressions'. They were led to believe that they would cooperate with another person, who could have a different social, cultural or medical background. Our experimental setting was very realistic, since our research laboratory is adjacent to the academic hospital.

In comparison with the first study, four alterations were carried out. First, to reduce the complexity of the design, we decided to only measure reactions to patients' expression of distress in the low personal responsibility and low seriousness condition. We assumed that perceivers would consider cooperation with a target in a highly serious condition less realistic. Second, the design was extended with a healthy target. In our opinion, our study would give a fuller picture of perceivers' reactions to patients' expression of distress, if we could also compare perceivers' reactions to persons with HIV with their reactions to a healthy target. Third, a substantial number of questions was added to our questionnaire, measuring intentions of pro-social behavior towards the target. In addition, physical distance to the target was measured as well, using a behavioral measurement. Finally, we decided to recruit participants from a local community, in order to be better able to generalize our results.

In this second study, we first investigate sex differences in perceivers' reactions to patients with HIV who convey distress. Again, we predict that women respond with stronger feelings of pity, whereas men will react with stronger feelings of anger. In addition, we expect a similar pattern of results on our measurements of pro-social behavior: We expect that women will report stronger pro-social behavior to persons with HIV who convey distress, whereas men will report less pro-social behavior. The present study also examines differences in reactions towards targets with HIV and healthy targets. On the basis of research in the field of HIV-related stigmatization (Crocker et al., 1998; Bos et al., 2001; Weiner et al., 1988) we expect that people respond with stronger fear, anger and stigmatization to a target with HIV than to a healthy target.

Method

Selection of participants

A list of addresses of residents of Maastricht, a moderately large city in the Netherlands, was drawn at random from a database of the Dutch National Telephone Company. A letter was sent to these households, informing about the alleged purpose of the study and announcing that they could be called soon with the request to participate in this study. The study was introduced in the letter as research on 'cooperation and first impressions', in which the participants would cooperate with another person who could have a different social, cultural or medical background. The letter also stated that the study would last for approximately one hour and that participants would be paid €10 for their participation. One week later co-workers from Maastricht University called the people on the list and tried to make an appointment with them. If people were willing to make an appointment, the prospective participants were asked to mention their age and highest level of education. This information was recorded so that participants could in advance be stratified over all conditions on the basis of age and educational level. Analyses of variance show that the four conditions

indeed do not differ from each other with regard to age ($F(3, 132) = .35$, n.s.) and educational level ($F(3, 132) = .24$, n.s.).

One hundred thirty-six persons participated in this study. Eighty-four participants were male and 52 participants were female. The mean age of the participants was 48.7 years (SD = 11.4). Thirty-one percent of the participants had a low, 36 percent a medium and 33 percent a high level of education[4].

Procedure

The experiment was conducted in the social sciences laboratory, which is adjacent to the academic hospital. Every hour one participant was scheduled. The experimenter welcomed the participants and explained the alleged goal and procedure of the study. The experimenter explained that they would first listen to an interview with Michael, their prospective interaction partner, in order to form a first impression of him. Then they would fill in a questionnaire about their initial reactions to Michael and their future cooperation with him. Subsequently they would go to another room where they would actually meet Michael. The experimenter explained that they would first have an acquaintance conversation and then play a shuffleboard game with Michael. Participants were told that they would form a team with Michael and that the best team in this study would win € 45. The experimenter told that the participants had to fill in a second questionnaire after the cooperation with Michael.

After the explanation of the procedure, participants listened to a pre-recorded interview with Michael. This interview contained the experimental manipulation. Hereafter they filled in a questionnaire, which measured emotional and behavioral reactions towards Michael. Then participants were taken to the other room, where a shufflingboard was set up and a jacket and plastic bag were placed on the right end of a row of six chairs. The experimenter remarked that personal belongings of Michael were placed on one of the chairs and concluded that Michael apparently went to the toilet. After this observation, he requested

the participants to get seated on one of the chairs, in anticipation of Michaels' return. As soon as the participant sat down, the seating position was recorded and the experiment was interrupted. Finally, participants were debriefed. Upon querying by the investigator, all respondents reported that they believed that they would actually meet Michael.

Manipulations

There were four versions of the taped interview with the target person (HIV: distress, HIV: no distress. HIV: no information, Healthy target). All tapes were recorded by the same male co-worker. For the HIV conditions the content of the interview was similar to Study 1. Michael provided general background information about himself, explained that he had low personal responsibility for the onset of the disease and indicated that his medical condition was fairly good. Subsequently, expression of distress was manipulated (distress, no distress, or no information).

In the healthy condition, Michael provided the same general background information and indicated that he visited the ear, nose and throat doctor in the hospital some months ago. He explained that his ears were stuffed up a bit and that the doctor had successfully syringed his ears. He emphasized that he has a sharp sense of hearing again and that he is healthy at present. We deliberately manipulated the healthy target in such a way that he had an innocent medical complaint in the past, in order that the items in the questionnaire would be applicable to the HIV conditions as well as the healthy condition.

Dependent measures

The questionnaire contained questions about participants' emotional and behavioral reactions to the anticipated cooperation with Michael. First, emotional reactions were measured, using the same questionnaire as in Study 1. Again, scales were formed for fear (Cronbach's alpha = .93), pity (Cronbach's alpha = .83) and anger (Cronbach's alpha = .77),

combining the same items as in Study 1. These emotional reactions were measured on a 7-point scale (1 = not at all, 7 = very much).

Subsequently, different intentions to display pro-social behavior were measured. Participants had to indicate on two Visual Analogue Scales (each ranging from 3 to 20 minutes) how much time they would like to spend on the acquaintance conversation and the shuffleboard task. The sum of the answers on both questions will be referred to as *minutes of cooperation*. Then respondents were asked to indicate topics that they would like to discuss with Michael during the acquaintance conversation. The *number of discussion topics* was recorded. Furthermore, respondents were asked to what extent they were willing to lend an ear to Michael. This type of *emotional social support* was measured on a 7-point scale. Respondents were also asked three questions about their willingness to support Michael in a more instrumental way (e.g. give him a glass of water when he would be coughing). These items, measured on a 7-point scale, were combined into one scale of *instrumental social support* (Cronbach's alpha = .75). The end of the questionnaire consisted of four questions checking the effectiveness of our manipulations of conveying distress and active coping. Each manipulation check contained the combination of the scores on two questions (Cronbach's alpha .76 for 'conveying distress' and .77 for 'active coping').

Finally, we used a similar procedure as Macrae, Bodenhausen, Milne and Jetten (1994, Study 2) to measure physical distance, which can be seen as a behavioral expression of stigmatization. Participants were asked to sit down on a seat in a row of six chairs. The experimenter noted the *seating position* (1 = seat located next to personal belongings, 5 = seat located on other end of the row).

Results

Manipulation checks

The manipulation check of conveying distress was subjected to a 3 (Expression of

distress: distress vs. no distress vs. no information) x 2 (Sex of participant: male vs. female) ANOVA. This analysis revealed the expected main effect. The target was judged as conveying more distress in the distress condition (M = 4.74) than in the no distress condition (M = 2.81) or the control condition (M = 2.05), $F(2, 99) = 54.94$, $p < .001$. Post-hoc analyses show that the differences between the distress condition and the other two conditions are significant.

Emotional and behavioral reactions

A priori contrasts were calculated to test our specific hypotheses. First, we tested the effect of 'conveying distress' on emotional and behavioral reactions separately in male and female perceivers. The weight '-2' was assigned to the distress condition, whereas the weights '1' were assigned to the other HIV conditions and '0' to the healthy target condition. Table 2 reports the results of these analyses. Consistent with our predictions, women reported stronger pro-social behavior to a person with HIV who was conveying distress. Women were more willing to provide emotional social support, reported more discussion topics, and were inclined to spend more time when the target with HIV conveyed distress. These positive behavioral effects of conveying distress were not found for male perceivers. In contrast with our hypotheses, we did not find significant sex differences in emotional reactions to patients with HIV who convey distress. However, the pattern of the means is in the predicted direction, with women reporting stronger pity and lower anger to patients who convey distress.

Second, we tested our specific predictions concerning different emotional and behavioral reactions to persons with HIV and healthy persons (separately for male and female perceivers). The weight '-3' was assigned to the healthy target condition, whereas the weight '1' was assigned to the three HIV conditions. Table 2 shows the results of these analyses. A target with HIV evoked stronger feelings of pity than a healthy target in both women and

men. However, men responded in a more stigmatizing manner to a target with HIV than to a healthy target. They reported stronger fear for a target with HIV and sat at greater distance from a target with HIV.

Discussion

The present study investigated emotional and behavioral reactions to HIV+ individual's expression of distress in a realistic experimental setting. This study demonstrates once more that men and women respond differently to HIV+ individuals who convey distress. In particular, women were willing to provide more emotional social support and to discuss more topics with individuals who conveyed distress. These forms of pro-social behavior appeal to perceivers' emotional sensitivity and communal attributes, qualities that are generally considered as belonging more to the female than to the male gender role. These findings corroborate our previous studies and results of Eagly and Crowley (1986), who found that women are in general helping more in a nurturing way. Contrary to our expectations, the present study did not reveal significant sex effects of conveying distress on emotional reactions, although the pattern of the means was in the predicted direction. The absence of significant effects may in part be attributable to the relatively small number of female participants in each cell. Another possible explanation is the heterogeneity of our sample. For instance, it may be possible that older people have developed better coping skills to deal with their emotions in interactions with seriously ill patients than younger people. Our data suggest that this may indeed be the case for female participants who anticipate interaction with a person with HIV: Pearson correlations show that older women report less fear (r = -.32, p < .05) and stronger pity (r = .47, p < .01). Conversely, age was not related to our measures of prosocial behavior and physical distance.

The present research also demonstrates that perceivers react differently to persons with HIV than to healthy persons. Persons with HIV seem to arouse stronger feelings of pity in

perceivers, compared to healthy persons. This finding is consistent with work of Dijker and Raeijmaekers (1999) who showed that serious diseases evoke stronger feelings of pity in perceivers. Our assumption that participants would report stronger stigmatizing reactions to persons with HIV than to healthy persons, was only supported for male perceivers. Men reported more fear for HIV-infected persons and sat further away from a target with HIV than a healthy target. Perhaps, men take instrumental considerations (e.g. contagiousness of HIV) into account in their interaction with persons with HIV.

To conclude, the outcomes of the present study suggest that persons with HIV who convey distress may evoke prosocial reactions in female perceivers. However, male perceivers seem less sensitive to such signs of distress and tend to base their reactions to a larger extent on disease characteristics.

General discussion

Two studies examined the interpersonal consequences of HIV+ individual's expression of distress on perceivers' reactions, using different research methods and various outcome measures. These studies support the notion that men and women react differently to ill persons who convey distress. In both studies women responded in a prosocial way to patients with HIV who convey distress, whereas men reacted in a negative or neutral manner. As we argued before, these findings are consistent with gender role theory (Eagly, 1987), which assumes that sex differences in social behavior are partly caused by people's tendency to behave consistently with their gender roles (Eagly, 1987; Eagly & Wood, 1991). Patients who convey distress seem to appeal to the female gender role, which consists of communal aspects, such as being friendly, concerned with others and emotionally expressive. In contrast, patients who convey distress seem to oppose to the male gender role, which consists of agentic aspects, such as being independent, assertive, masterful, self-confident and dominant (Eagly & Wood, 1991).

However, an alternative explanation for our sex differences should be considered. Although it seems obvious that our sex differences reflect actual differences between male and female perceivers, it might be possible that these sex differences refer to the appropriateness of the behavior of our *male* target. In other words, it seems conceivable that female perceivers respond positively to the fact that a male patient displays behavior that is inconsistent with his male gender role. Conversely, male perceivers might respond negatively, because they consider it inappropriate that the male target shows behavior that is opposed to his male gender role. Future research should address this issue by varying the sex of the target as well. Our findings illustrate the importance of close examination of sex differences in helping behavior and social support provision, recognizing that men and women may respond in different ways.

The results of our studies extend previous findings of Silver et al. (1990) with regard to conveying distress. Silver et al. (1990) reported that female respondents reacted negatively to a female patient who displayed poor coping and high levels of distress. Our studies reveal that a *moderate level* of distress may trigger prosocial reactions in female perceivers. Thus, displaying a moderate level of distress in social interaction might be a cue for prosocial reactions in women. Nevertheless, male perceivers do not respond positively to moderate levels of distress.

Interestingly, one might argue that our effects on ‘conveying distress’ resemble the favorable effects of ‘balanced coping’ in the Silver et al. (1990) study. Their manipulation of ‘balanced coping’ apparently consisted of lower levels of distress, compared to their ‘poor coping’ condition. Furthermore, their respondents (who were all female) reacted in a prosocial manner to these lower levels of distress. Although prosocial reactions may result from the combination of conveying distress and indicating that one is coping well, it might be argued

that communicated distress was crucial in triggering prosocial reactions in female participants.

It is important to remember that the generalizability of our results is limited to brief initial encounters with strangers. Conveying distress may serve as a cue for prosocial reactions in female perceivers in initial contact, but may have opposite effects in the long-term. If patients repeatedly confront others with signs of distress, they may convey too much distress or may be perceived as behaving in a pitiful manner, resulting in negative responses from others. Kuijer et al. (2000) reported a study on social support provision by intimate partners of patients with cancer. They found that intimate partners show more active engagement if patients are more distressed and partners think that the patient is coping better with the cancer. These results suggested that cancer patients may display signs of distress to get their partners' positive attention, as long as they communicate to their partner that they try to cope with the situation (Kuijer et al., 2000). More research is needed to investigate the effects of patients' expression of distress in real social interaction (see also Hebl & Dovidio, 2005) and in closer relationships. In addition, the current results should be replicated for other illnesses as well.

In everyday life seriously ill persons encounter various situations in which they meet relative strangers (e.g. in the workplace, neighborhood or hospital). In such interaction contexts, people's reactions are to a large extent based on first impressions and stigmatizing reactions are likely to occur. The present studies contribute to our understanding of reactions to patients' expression of distress in social interaction with strangers, a research area that has received surprisingly little attention. In addition, our findings shed additional light on the self-presentational dilemma of patients. Whereas previous research demonstrated that patients are likely to receive negative reactions when they overwhelm perceivers with signs of distress (Silver et al., 1990), the present studies demonstrate that conveying a *moderate level* distress

may have positive consequences on emotional and behavioral reactions of women.

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Footnotes

[1] We have not assessed participants' HIV status and previous exposure to HIV+ individuals. In the Netherlands, the adult prevalence rate of HIV is relatively low (0.3%) with highest incidence among homosexuals (UNAIDS, 2004). Therefore, we assume that almost all participants were seronegative and that a large majority of them has never been exposed to a person with HIV in social interaction.

[2] A *male* target person was used, because of the greater prevalence of AIDS among men in the Netherlands.

[3] In the present studies a *heterosexual* target person was used, in order to limit the moderating role of attitude towards homosexuals on perceivers' responses to coping with HIV.

[4] Low education includes primary school, lower vocational education and lower general secondary education. Medium education contains intermediate vocational education, higher general secondary education and pre-university education. High education includes higher vocational education and university.

Table 1

Means, standard deviations and contrast analyses for emotional reactions to 'conveying distress' of target with HIV (Study 1).

Dependent variables		Condition			T-values of contrasts
		1.No distress	2. Distress	3. No information	(1 –2 1)
Fear					
Women	*M*	3.43	3.44	3.46	0.02
	SD	1.77	1.44	1.47	
	N	32	32	32	
Men	*M*	2.99	2.81	2.98	0.58
	SD	1.41	1.54	1.67	
	N	43	41	42	
Pity					
Women	*M*	4.53	5.31	4.80	2.58*
	SD	1.22	0.91	1.28	
	N	32	31	32	
Men	*M*	4.74	4.69	4.36	0.63
	SD	1.15	1.17	1.18	
	N	42	42	42	
Anger					
Women	*M*	2.16	1.66	2.33	1.89
	SD	1.71	0.95	1.53	
	N	32	32	32	
Men	*M*	1.98	2.81	2.24	2.53*
	SD	1.19	1.72	1.46	
	N	43	42	42	

Note * $p < .05$.

Table 2

Means, standard deviations and contrast analyses for emotional and behavioral reactions (Study 2).

Dependent variables		Condition				T-values of contrasts	
		1. HIV No distress	2. HIV Distress	3. HIV No information	4. Healthy No information	Distress (1 –2 1 0)	Stigma (1 1 1 -3)
Fear							
Women	*M*	3.14	3.21	2.50	2.33	0.68	1.16
	SD	1.42	1.87	1.55	1.76		
	N	14	13	12	13		
Men	*M*	2.82	2.35	2.65	1.89	1.15	2.12*
	SD	1.20	1.29	1.43	1.16		
	N	19	22	22	19		
Pity							
Women	*M*	5.00	5.56	5.17	3.68	1.42	4.70**
	SD	1.01	0.98	0.92	0.96		
	N	14	12	12	11		
Men	*M*	4.95	5.15	5.01	3.61	0.60	5.14**
	SD	0.95	1.14	1.03	1.18		
	N	20	21	22	20		
Anger							
Women	*M*	2.29	1.35	1.88	1.81	1.41	0.06
	SD	1.71	0.55	1.46	2.00		
	N	14	13	12	13		
Men	*M*	2.03	1.84	2.00	1.47	0.53	1.49
	SD	1.24	1.24	1.36	1.07		
	N	20	22	22	19		

<Table 2 to be continued>

<Table 2 continued>

Dependent variables		Condition				T-values of contrasts	
		1. HIV No distress	2. HIV Distress	3. HIV No information	4. Healthy No information	Distress (1 –2 1 0)	Stigma (1 1 1 -3)
Seating position							
Women	*M*	2.36	2.54	2.42	2.58	0.58	0.58
	SD	0.50	0.78	0.90	0.90		
	N	14	13	12	12		
Men	*M*	2.95	2.77	2.86	2.33	0.58	2.29*
	SD	0.85	0.81	0.94	0.84		
	N	19	22	22	18		
Minutes of cooperation							
Women	*M*	27.25	29.06	23.47	27.33	1.85#	0.39
	SD	7.02	5.37	3.03	6.62		
	N	13	13	11	13		
Men	*M*	24.48	26.39	24.86	26.03	0.92	0.43
	SD	5.52	6.43	6.46	8.79		
	N	18	21	20	19		
Numer of discussion topics							
Women	*M*	2.36	3.62	2.00	1.77	2.52*	1.66
	SD	1.65	2.10	1.35	1.48		
	N	14	13	12	13		
Men	*M*	2.45	2.77	3.00	3.11	0.11	0.82
	SD	1.57	1.63	1.92	1.63		
	N	20	22	21	19		

<Table 2 to be continued>

<Table 2 continued>

Dependent variables		Condition				T-values of contrasts	
		1. HIV No distress	2. HIV Distress	3. HIV No information	4. Healthy No information	Distress (1 –2 1 0)	Stigma (1 1 1 -3)
Emotional social support							
Women	*M*	5.77	6.50	5.83	6.38	2.31*	1.26
	SD	1.09	0.52	0.72	0.96		
	N	13	12	12	13		
Men	*M*	5.80	6.14	5.95	5.95	0.88	0.05
	SD	1.24	0.64	0.90	1.54		
	N	20	22	22	20		
Instrumental social support							
Women	*M*	6.36	6.58	6.19	6.33	1.11	0.17
	SD	0.89	0.49	0.89	0.80		
	N	13	12	12	12		
Men	*M*	5.75	6.14	6.29	6.43	0.45	1.48
	SD	1.11	1.20	0.91	0.63		
	N	20	22	22	20		

Note # $p < .10$, * $p < .05$, ** $p < .01$.