

The Illusion of Unique Invulnerability and the Use of Effective Contraception

Jerry M. Burger
Linda Burns
Santa Clara University

It was proposed that one reason people often fail to use effective contraception methods is that they engage in a systematic distortion of their likelihood of being involved in an unwanted pregnancy relative to others. A survey of undergraduate females found that sexually active women tended to see themselves as less likely than other students, other women their age, and women of childbearing age to become pregnant. The tendency to utilize this illusion of unique invulnerability was related to the use of effective contraception. The more subjects discounted their chances of becoming pregnant relative to others, the less likely they were to use effective methods of birth control.

Despite the availability of relatively effective methods of birth control, unwanted pregnancy continues to be a major problem in this country. American women are seeking out abortions to deal with many of these unwanted pregnancies at a rate of one and a half million per year. Naturally, many psychologists have been interested in understanding this seemingly irrational failure to utilize contraception when having intercourse (see Byrne & Fisher, 1983). Among the many variables that have been identified in the search to predict contraceptive behavior are sex guilt (Gerrard, 1982), contraceptive knowledge (Allgeier, 1983), communication between partners (Burger & Inderbitzen, 1985), and self-image (McKinney, Sprecher, & DeLamater, 1984).

Another approach to understanding the failure to utilize effective birth control that will be presented here concerns the use of information-processing errors by those not using contraception. More specifically, we were interested in the manner in which women perceive their chances of becoming pregnant. It has been noted (Cvetkovich & Grote, 1983) that victims of unwanted pregnancies often report that they did not believe that they or their partner would become pregnant, even though they clearly understood the biological reasons for the pregnancy. These people seem to be saying that they knew what they were doing might cause a pregnancy, but they didn't believe it would happen to them.

Researchers investigating other behaviors have discovered a similar style of thinking (Perloff, 1983; Perloff & Fetzer, 1986; Weinstein, 1980). For example, people have been found to rate themselves as significantly less likely than others

Personality and Social Psychology Bulletin, Vol. 14 No. 2, June 1988, 264-270
© 1988 by the Society for Personality and Social Psychology, Inc.

to fall victim to health problems, such as cancer or heart attacks; assaults, such as muggings or car theft; or unpleasant life events, such as divorce or losing one's job (Perloff & Fetzer, 1986; Weinstein, 1980). This systematic biasing of one's likelihood of victimization has been termed an "illusion of unique invulnerability" by Perloff and Fetzer (1986) and has been used to suggest why people may fail to take adequate precautions to avoid such unfortunate, but partially preventable, events as lung cancer and car theft. It is recognized that these things happen, but people typically see themselves as unlikely victims.

When the illusion-of-unique-invulnerability phenomenon is applied to the question of unwanted pregnancies, it seems possible that this systematic distortion may account in part for the failure by many people to use effective contraception. It may be that many sexually active people are underestimating their chances of becoming involved in an unwanted pregnancy. They recognize that other people get pregnant from sexual activity, but perceive their own chances as so slim as to not require the trouble to obtain and use birth control.

Several explanations have been advanced to account for the illusion-of-unique-invulnerability effect (see Perloff, 1983). Some emphasize motivational mechanisms, such as reducing the anxiety associated with perceived vulnerability or satisfying a need to feel in control of events rather than at the mercy of diseases and criminals. Sexually active people who do not want the woman to become pregnant may be able to reduce the anxiety of possible pregnancy by convincing themselves that it won't happen. Other interpretations point to cognitive mechanisms. Weinstein (1980), for example, has proposed that people often compare themselves with inappropriate prototypes of victims that cause them to conclude that they are not a likely candidate for victimization. In asking themselves if they will become an unmarried pregnant woman, some women may generate a stereotyped image of a pregnant female. Because this image resembles them very little, they may conclude that they are not the type of person unwanted pregnancies happen to.

The purpose of the present investigation was twofold. First, the study was designed to determine if sexually active female adults fall victim to the illusion of unique invulnerability when making decisions about their chances of becoming pregnant. If this proved to be the case, then it was expected that these individuals would estimate their chances of becoming pregnant as significantly less than those of others. Second, if this systematic distortion of one's chances of becoming pregnant is related to the failure to take precautions—that is, to use contraception—then it was predicted that the more people engage in the illusion of unique invulnerability, the less likely they will be to use contraception.

METHOD

Subjects

A survey was distributed to 76 female undergraduates enrolled in several different upper division (juniors and seniors) psychology classes at a liberal arts

university. Fifty-nine (77.6%) of these returned the questionnaire, and thus composed the final sample. No incentive beyond helping the experimenter and the opportunity to see the results was offered for participation.

Procedure

Female students attending one of the class meetings selected for the study were given a survey package. Only those who had been or were married (very few) and those who had already received a survey were excluded. The package contained a cover letter, the survey questionnaire, and a stamped, self-addressed envelope. It was explained to the subjects at that time and in the cover letter that the researcher was interested in the sexual attitudes and behaviors of university students. Subjects were asked to take the survey home with them and to return it via the mail after completion. All subjects were assured that their responses would remain anonymous and confidential, and the voluntary nature of participation was emphasized.

Following a short personality measure not relevant to the present investigation (the Desirability of Control Scale, Burger & Cooper, 1979), the survey questionnaire asked subjects to indicate on a 101-point scale, with 0 = *no chance* and 100 = *certainty*, the likelihood that they would become pregnant in the next 12 months. Using the same scale, subjects then indicated the likelihood that the average female student at the university would have an unwanted pregnancy, the likelihood that the average American female her age would have an unwanted pregnancy, and the likelihood that the average American female of childbearing age would have an unwanted pregnancy during the next 12 months.

Next, subjects were asked to indicate, if applicable, the percentage of the times they had engaged in sexual intercourse during the past 6 months in which they had used contraception. The questionnaire asked subjects to indicate this percentage for each of the following methods: birth control pill, condom, condom with spermicide, diaphragm, douching, intrauterine device, rhythm (as plotted by a knowledgeable source), intuitive feelings about good and bad times of the month, spermicide, contraceptive sponge, withdrawal, none, and other. (No subject indicated any use of an "other" method.) For example, a subject who had used birth control pills 80% of the time and a condom 20% of the time would indicate 80 and 20 by these two methods on the survey. Subjects were reminded that their responses should total 100%.

Subjects then were asked about their sexual behavior. Of relevance to the present study, subjects were asked to indicate if they had engaged in sexual intercourse at all during the past 6 months. Finally, subjects were asked if they had ever been pregnant.

RESULTS

Thirty-four of the 59 subjects (57.6%) indicated that they had engaged in sexual intercourse at least once during the past 6 months. Because the study was

TABLE 1 Mean Likelihood-of-Pregnancy Ratings

You (the subject)	9.24
Average female at the university	26.97
Average American female your age	42.59
Average American female of childbearing age	46.03

Note: Based on scale with 0 = *no chance* and 100 = *certainty*.

interested only in understanding the contraceptive behavior of those who are at risk for becoming pregnant, the nonactive subjects were not included in the analyses.

The first question was whether the students perceived themselves as being less vulnerable to pregnancy than others. To calculate this, the likelihood-of-pregnancy rating the subjects gave themselves was compared with each of the other three likelihood-of-pregnancy ratings through dependent *t*-tests. As shown in Table 1, the subjects indicated that they were less likely to have an unwanted pregnancy during the upcoming year than the average female at the school, $t(33) = 5.11$, $p < .001$, than the average woman their age, $t(33) = 8.93$, $p < .001$, and than the average woman of childbearing age, $t(33) = 8.66$, $p < .001$. Thus these women appeared to show the illusion-of-unique-invulnerability effect. This effect is especially pronounced given that all of the subjects were sexually active, whereas many of the women in the comparison groups (e.g., the average female at the school) were not.

The second question was whether this illusion of unique invulnerability was related to the use of contraception. To test this, the likelihood-of-pregnancy ratings the subjects gave themselves were subtracted from each of the other three likelihood-of-pregnancy ratings. These three values were then summed to form an overall illusion-of-unique-invulnerability score. That is, the higher the score, the more the student believed that others would more likely become pregnant than she. This score then was correlated with the value the subjects reported for the percentage of time they had used contraception when engaging in intercourse during the last 6 months. The contraception percentage score was calculated by summing the percentages subjects reported for using legitimate contraceptive methods. That is, the percentage of time subjects reported using a method other than withdrawal, douching, or intuitively guessing at a safe time of the month were summed (e.g., if a subject reported using condoms 50% of the time, a diaphragm 40% of the time, and withdrawal 10% of the time, a contraception score of 90 was calculated).

The average percentage of legitimate contraceptive use by the sexually active females was 67.9%. The correlation between the contraception percentage measure and the illusion-of-unique-invulnerability measure was $-.34$, $p < .05$. Thus the higher the illusion-of-unique-invulnerability score, the less likely the subject was to use effective contraception when having intercourse.

Another way to examine this relationship is to utilize a weighted formula for

contraceptive behavior that takes into account the effectiveness of the method of choice. As was done in earlier research (Burger & Inderbitzen, 1985), the percentage of time a subject utilized a given method of contraception was multiplied by the effectiveness rating of that method. (The effectiveness rating indicates the estimated number of women out of 100 who will not get pregnant within a year using the method.) These scores were then summed to determine an overall contraception-effectiveness rate for each subject. The mean effectiveness rate for the sexually active women in the sample was 82.97. When this score was correlated with the illusion-of-unique-invulnerability score, a correlation coefficient of $-.33$ was obtained, not appreciably different from the nonweighted contraception correlation.

DISCUSSION

The results provide support for the notion that undergraduate females engage in a systematic distortion of their perceptions of becoming pregnant relative to others. Sexually active subjects rated other women attending the university as almost three times as likely to become pregnant as they were, even though the average college female is not necessarily even sexually active. It seems safe to say that these students understand that engaging in sexual intercourse can lead to pregnancy, but they tend to see this as happening to someone else, rather than to themselves.

In addition, it was found that the more the women engaged in this illusion of unique invulnerability, the less likely they were to use effective methods of contraception. One interpretation of this finding is that the illusion of unique invulnerability is one of the reasons for this poor use of contraception. Women who believe they have little chance of becoming pregnant are less likely to take the precautions that rational judgment dictates. On the other hand, because the data are correlational, we cannot rule out the possibility that the poor use of contraception comes first and that this causes the cognitions. That is, women who risk pregnancy may rationalize their behavior by convincing themselves that they are not likely to become pregnant. This interpretation is consistent with a cognitive dissonance (Festinger, 1957) or self-perception (Bem, 1972) view, both of which propose that people often bring their attitudes in line with their behaviors. Future investigations that assess both contraceptive behavior and cognitions about vulnerability to pregnancy at more than one time might help to disentangle the causal link in this phenomenon.

Yet another possibility is that these women are simply overestimating other people's chances of becoming pregnant and accurately appraising their own. However, the high rate of unwanted pregnancies (in this sample, 8 of the 34 sexually active females, 23.5%, indicated that they had been pregnant) suggests this is not the case.¹

One direction for future work in this area is in obtaining a better understanding of the mechanisms underlying the illusion-of-unique-invulner-

ability effect. One possibility suggested by the work of Weinstein (1980) is that the women in the present sample used an inappropriate comparison of themselves to other potential victims. According to Weinstein, people often generate, for example, a prototypic alcoholic when assessing their likelihood of developing an alcohol problem. Because these people typically see themselves as being very dissimilar to the prototype, they conclude that they are unlikely to be like this alcoholic. Consistent with this reasoning, Perloff and Fetzer (1986) found that people tended to see someone very similar to themselves (their closest friend or a sibling) as also being relatively invulnerable. In the present investigation it seems likely that the college students' prototypic images of an unwed, pregnant woman were very dissimilar to their self-images. Thus they may have concluded that they were not the type who got pregnant. Another possibility is that some of the motivational processes described earlier may have been operating. Subjects may have been protecting themselves from the anxiety-provoking thought of pregnancy by downplaying their chances of becoming pregnant.

Finally, if one of the factors contributing to the failure to use contraception is the illusion of unique invulnerability, then some implications may be drawn for those working to reduce the problem of unwanted pregnancy. As suggested by the above reasoning, it may be important for men and women to realize that they are as vulnerable as anyone else to becoming involved in an unwanted pregnancy. Undergraduates may believe that this kind of thing does not happen to nice college students because they do not see or hear about all of the many unwanted pregnancies encountered by college students each year. Making people aware that pregnancy does happen to someone like them may help in part to encourage those choosing to engage in sexual intercourse to also engage in the use of effective contraception.

NOTE

1. It might be expected that the women who experienced pregnancy would see their vulnerability and would no longer experience the illusion of unique invulnerability. However, this did not appear to be the case. Although the sample size is small, these 8 women did not differ significantly from the others in terms of their likelihood-of-pregnancy estimates or in their use of contraception.

REFERENCES

- Allgeier, A. R. (1983). Informational barriers to contraception. In D. Byrne & W. A. Fisher (Eds.), *Adolescents, sex, and contraception* (pp. 143-169). Hillsdale, NJ: Lawrence Erlbaum.
- Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1-62). New York: Academic Press.
- Burger, J. M., & Cooper, H. M. (1979). The desirability of control. *Motivation and Emotion*, 3, 381-393.
- Burger, J. M., & Inderbitzen, H. M. (1985). Predicting contraceptive behavior among

- college students: The role of communication, knowledge, sexual anxiety, and self-esteem. *Archives of Sexual Behavior*, 14, 343-350.
- Byrne, D., & Fisher, W. A. (1983). *Adolescents, sex and contraception*. Hillsdale, NJ: Lawrence Erlbaum.
- Cvetkovich, G., & Grote, B. (1983). Adolescent development and teenage fertility. In D. Byrne & W. A. Fisher (Eds.), *Adolescents, sex and contraception* (pp. 109-123). Hillsdale, NJ: Lawrence Erlbaum.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Gerrard, M. (1982). Sex, sex guilt, and contraceptive use. *Journal of Personality and Social Psychology*, 42, 153-158.
- McKinney, K., Sprecher, S., & DeLamater, J. (1984). Self-image and contraceptive behavior. *Basic and Applied Social Psychology*, 5, 37-57.
- Perloff, L. S. (1983). Perceptions of vulnerability to victimization. *Journal of Social Issues*, 39, 41-61.
- Perloff, L. S., & Fetzer, B. K. (1986). Self-other judgments and perceived vulnerability to victimization. *Journal of Personality and Social Psychology*, 50, 502-510.
- Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, 39, 806-820.

Jerry M. Burger is Associate Professor of Psychology at Santa Clara University. His research interests include the perception of and motivation for personal control, and attribution processes.

Linda Burns has a bachelor's degree in psychology from Santa Clara University.