DOCUMENT RESUME

ED 252 752 CG 017 920

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TITLE Adolescent Contraceptive Use: Models, Research, and Directions.
PUB DATE Aug 84
NOTE 12p.; Paper presented at the Annual Convention of the American Psychological Association (92nd, Toronto, Ontario, Canada, August 24-28, 1984).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Adolescents; College Students; *Contraception; *Decision Making; Higher Education; Meta Analysis; Models; Secondary Education; Self Concept; *Sex Differences; Sex Role; Use Studies

ABSTRACT

Both the career model and the decision model have been proposed to explain patterns of contraceptive use in teenagers. The career model views contraceptive use as a symbol of a woman's sexuality and implies a clear decision to be sexually active. The decision model is based on the subjective expected utility (SEU) theory which holds that people weigh the perceived costs and benefits of the expected outcomes of various behaviors and select the behavior which maximizes benefits and minimizes costs. In order to test these models, a review of research was conducted. The studies included in the review were those which assesed actual contraceptive use (and nonuse) of sexually active adolescents. Meta-analysis indicated that both models received good support for women, but little support for men. A major variable in the career model for women was sexual role self-acceptance. This model was less applicable to men, possibly because acceptance of their sexuality may be less problematic. In the decision model, women's contraceptive use was positively related to the perceived risk of pregnancy. Research suggests that there is only a little overlap in the sets of variables which affect male and female contraceptive use. (LLL)

Paper Presented at the Meeting of the
AMERICAN PSYCHOLOGICAL ASSOCIATION
Toronto, Ontario, Canada
August, 1984

Adolesecnt Contraceptive Use: Models, Research, and Directions

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Surveys conducted by the Alan Guttmacher Institute (1979, 1981) have found that about 1 million American teenagers become pregnant each year. Most of these young women are unmarried and their pregnancies are unintended. About one-fifth of these pregnancies result in births (Klerman & Jekel, 1978), which can be followed by such maladaptive consequences as the disruption of educational and vocational plans, hasty marriage followed by quick divorce, and child abuse (Baizerman et al., 1971; Semmens, 1978; Starr, 1979). These tragedies are compounded by the fact that a contraceptive technology exists which could come close to eliminating the problem if effectively applied. Why then is contraception not used by teenagers who do not actively desire to become parents? Two models of adolescent contraceptive use--the career model and the decision model--have been proposed to answer this question.

The contraceptive career model holds that a person moves through several stages in the use of contraceptive techniques; the force commonly proposed as the motivator for movement from stage to stage is an increase in the person's acceptance of his or her sexuality. Lindemann's (1974) model of women's contraceptive careers, for example, posits three stages. In the first stage sexual intercourse is relatively rare and unplanned and the woman does not perceive herself as a sexual being, so she either does not use contraception or does not take responsibility for it. The second stage is characterized by more frequent sexual activity accompanied by at most a moderate acceptance of sexuality. As a result, the woman is reluctant to seek contraceptive advice outside her most intimate friendship circle. In the final stage,

the woman has incorporated sexuality ino her self-concept and so is more willing to use contraceptive methods which require pre-planning and to seek professional contraceptive advice.

In sum, the career model views contraceptive use as a symbol of a womans's sexuality in that it implies a clear decision to be sexually active. Nonuse of contraception implies that sexual activity is unintentional and thus helps to reduce any guilt resulting from a violation of sexual norms. As the woman comes to accept her own sexuality, nonuse of contraception becomes less needed as a method of guilt reduction and contraceptive use increases. Cvetkovich, Grote, Bjorseth, and Sarkassian (1975) have applied a similar model to all adolescents rather than just women. However, Adler (1981) and Scales (1977) suggest that a model based on the progressively increasing acceptance of one's sexuality is less appropriate to men because the male sex role implies continuous acceptance of sexuality.

The decision model is based on subjective expected utility (SEU) theory, which holds that people weight the costs and benefits of the expected outcomes of various behaviors by the perceived probability of the outcomes and select the behavior which maximizes benefits and minimizes costs. In the case of a sexual encounter, if the expected benefits of contraception outweigh its expected costs, then it will be used, otherwise not. SEU models have been found to be useful in predicting contraceptive behavior among adults (Adler, 1979), but no direct tests of the model's ability to explain adolescent contraceptive behavior have been made. Fishbein (1972) has elaborated the SEU model by explicitly considering the effects of the social norms which facilitate or inhibit a behavior and the motivation to comply with these

norms. Thus, a cost-benefit analysis of nonsocial factors which results in an outcome favoring contraception could be outweighed by a negative norm. This elaborated model works well with adults (Adler, 1980), and has recently received some support in research with adolescents (Fisher, 1979, McCammon, 1982).

Despite the existence of these models, relatively little research has been directed at testing them. Rather, research has tended to be atheoretical and directed at describing the characteristics of contraceptive users and nonusers. Nonetheless, this research has included a large number of variables relevant to the models. This paper reports a meta-analysis of the research on those variables.

Method

The research reviewed here was located through searches of Psychological Abstracts, Sociological Abstracts, and the ERIC index. To be included in this review a study had to meet the following criteria: (a) its subjects were adolescents (including college students), (b) it assessed the actual use of contraception, (c) it included both users and nonusers of contraceptives, and (d) the nonusers were sexually active. A total of 187 studies were located which met these criteria. The majority of the studies (67%) used only female subjects; college-age subjects were the most-studied age group (66%). Not surprisingly, then, college-age women were the most studied group (64%), followed by high-school-age women (47%) and college-age men (26%).

This review used meta-analysis to summarize the results of the studies reviewed (e.g., Glass, McGaw, & Smith, 1981; Hunter Schmidt, & Jackson, 1982). A common metric was formed by converting the studies'

test statistics to correlation coefficients using the formulas provided by Glass et al. Following the conceptual schema of Hunter et al., the mean of the studies' correlations between each given independent and dependent variable was taken as the best estimate of the true correlation. When five or more studies provided correlations, the standard error of the mean correlation was computed and the mean was tested to determine if it was significantly different from zero.

Results

The results of the meta-analysis are summarized in Table 1. Note that both models received good support for women, but little support for men. In addition, most variables have been underinvestigated in men.

Career Model

The major variable in the career model is sexual role self-acceptance, which had a positive correlation with contraceptive use for women. Variables which the career model relates to sexual role self-acceptance, such as sexual experience and frequency of intercourse, are also positively related to contraceptive use by women. Similarly, variables associated with increasing psychological maturity are positively related to contraceptive use by women: age, internal locus of control, self-esteem, rejection of traditional sex roles, and future orientation. Finally, social variables which Abramson (1983) associates with increased sexual role acceptance are associated with women's contraceptive use: a more intimate relationship with one's sexual partner and social support from significant others. Fewer variables were related to male contraceptive use: frequency of intercourse, age, and relationship intimacy. In addition, sexual role acceptance, future orientation, and partner support had reasonably large mean correlations,

but too few cases to be tested for significance. It is possible that the career model is less applicable to young men, since their acceptance of their sexuality may be less problematic (e.g., Adler, 1981; Scales, 1977).

Decision Model

A prerequisite for decision-making is the perception of the need to make a decision. Thus, women's contraceptive use is positively related to the perceived risk of pregnancy. A good information base, in the form of sexual and contraceptive knowledge, also promotes contraceptive use, and positive beliefs about contraception (reflected in positive attitudes) which would lead to a positive cost-benefit analysis, are positively related to contraceptive use for women. In addition, a positive subjective norm, reflected in partner and social support, is predictive of women s contraception use. Finally, although there were too few cases for significance testing, planned intercourse, low conservatism, and good problem-solving skills are also related to women's contraceptive use. One variable for which the SEU approach would predict a relation with contraceptive use, previous pregnancy, was not related, and motivation to avoid pregnancy and acceptance of responsibility for contraception had only low correlations with contraceptive use. For men, only positive attitudes toward contraception were significantly related to contraceptive use.

Conclusions

The meta-analysis presented above yielded good support for the career model of young women's contraceptive use, and there is some evidence supporting the decision model. Young woman apparently do weigh the advantages and disadvantages of contraception as they see them

against the risk of pregancy and its consequences. This process is constrained by the quality and quantity of information they have about sex and contraception and by the opinions of their social support networks. However, the decision model implies a very rational decision-making process which is probably more likely to occur in some situations than in others. For example, a woman who would normally use contraception might not have it readily available if she is not currently involved in a sexual relationship, but she might become caught up in a situation in which unplanned, and therefore unprotected, intercourse occurs.

The preceding paragraph focused on women because young men's role in contraception has been relatively under-investigated. To some extent this situation is understandable since unwanted pregnancy is physiologically a women's problem and contraceptive technology is primarily woman-oriented. On the other hand, an understanding of the factors affecting male contraceptive use can lead to methods of promoting that use and so lead to a reduction in the risk of unwanted pregnancy. What research there is suggests that there is only a little overlap in the sets of variables which affect male and female contraceptive use (see Table 1); one necessary focus for future research, then, is male contraceptive use.

A methodological issue related to contraceptive use, especially male use, is emphasis on personal rather than couple use. Most research does not distinguish between the respondant's own use of contraception and use by his or her partner. Thus, the relations between male contraceptive use and other variables which have been found may be artifactual, resulting from a correlation between the man's and woman's

score on the other variable. For example, age predicts contraceptive use in both men and women, but the ages of sexual partners are also highly correlated. Therefore, the male age => reported contraceptive use in the relationship relation may actually be a male age (=) female age => female personal contraceptive use relation.

Contraceptive use is usually thought of only as a means of preventing pregnancy. Research has shown, however, that it can also serve other functions, the effects of which on contraceptive use should be investigated more thoroughly. Nonuse of contraception can, for example, serve as a means of impression management, indicating that intercourse was not anticipated or planned. Nonuse can also serve as a means of controlling the sexual relationship or as a valid excuse for refusing intercourse.

In sum, then, a great deal of work has been done on the question of adolescent contraceptive use, and a number of important personal, social, and situational factors have been identified which affect it. A great deal more work remains, however, especially in the area of male contraceptive use.

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Table 1

Models of Contraceptive Use and Their Associated Variables

Variables	Hypothesized Relation	Observed Relations: Women Mean r	n	Men Mean r	n
Career Model					
Sexual role self-acceptance	+	.26***	17	.17	6
Traditional sex role	-	-.14*	5	(.04)	3
Sexual experience	+	.13*	7	(.04)	3
Frequency of intercourse	+	.21***	20	.30**	6
Age of respondant	+	.12**	20	.10*	9
Internal locus of control	+	.08**	15	.05	5
Self-esteem	+	.16**	9	.02	7
Future orientation	+	.25***	10	(.31)	1
Relationship with partner	+	.13**	21	.17**	9
Social support	+	.18***	16	(.02)	4
Partner support	+	.37***	7	(.60)	2
Decision Model					
Perceived risk of pregnancy	+	.27*	5	---	0
Acceptance of responsibility	+	(.13)	1	---	0
Plannedness of intercourse	+	(.21)	2	(.09)	2
Knowledge of contraception	+	.16**	14	.09	5
Attitude toward contraception	+	.23**	12	.27*	7
Conservatism	-	(-.27)	3	(-.37)	1
Partner support	+	.37**	7	(.60)	2
Social support	+	.18**	16	(.02)	4
Problem-solving ability	+	(.32)	1	---	0
Risk-taking	-	(.06)	2	---	0
Motivation to avoid pregnancy	+	(.10)	3	---	0
Previous pregnancy	+	.11	6	(-.35)	2

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

Note: Mean correlations in parentheses had too few cases for significance testing.