The purpose of this study was to survey the possible variables in the use of medically distributed contraceptives (MDC) among unmarried coeds. The sample consisted of 102 students from Ohio State University. The variables found to be most strongly associated with MDC use are self-image and social interaction. Coeds whose self-images are occupationally rather than maritally oriented are more likely to use MDC. Non-users are more likely to perceive "pill" users as more promiscuous, and thus tend to avoid this negative image. MDC users know more girlfriends who are having premarital sexual intercourse and more who are using MDC. The user's sexual behavior is also known by more of their acquaintances. More encouragement to use MDC from both boyfriends and girlfriends is experienced by the users. Finally, users are more likely to perceive that their parents would prefer they use MDC than risk pregnancy, and more likely to have voluntarily informed their parents of their sexual behavior. (Author)
Research concerning contraceptive use and fertility has largely ignored the unmarried population. A few studies reporting the knowledge and attitudes of the unmarried toward contraception have appeared (Angrist, 1966; Grinder, 1966). In addition M. Schofield's study (1965) and V. Packard's (1968) discussed the contraceptive use of their respondents. One recent study by Lundy (1972) investigated some personality correlates associated with use and nonuse of contraceptives. However, to date there has been no research concerning the sociological factors involved in why some unmarrieds use highly effective contraception while others use less reliable methods or none at all.

Using the conceptual framework provided by symbolic interactionism this study attempts to discover some of the social variables in the use of contraception by unmarried college women. Specifically two groups of never married college women were compared. One group called medically distributed contraceptive users (or MDC users) was made up of students who were employing reliable methods of contraception specifically distributed by the medical profession, consisting primarily of the pill and diaphragm. The other group was sexually active...
students who were using either no contraception or a less reliable form or some combination of less reliable forms.

Variables and Hypotheses

If we perceive the need not to get pregnant, i.e., the use of effective contraception, as a problem solving situation confronting the sexually active college women, the interactionist perspective can be used to label and examine three main elements in this situation: 1) the self concepts and related role expectations which the individual brings to the situation, 2) the level of communication engaged in concerning the problem, i.e., avoidance of pregnancy, 3) the social influence of specific reference group and significant others. Obviously these three are interrelated but for research purposes they are separated.

Self Concept

Komarovsky (1946) pointed out that college women live with the inconsistent role expectations of "home-maker" vs "career girl" identities. Although most college women undoubtedly identify with both these images, a stronger identity as a future professional would appear to incline the coed to more effective contraceptive use than wife-mother expectations. Pregnancy to the women with career plans would constitute a crisis in interrupted education and employment. Although premarital pregnancy might be inconvenient to
the women with wife-mother expectations it might also be viewed as bringing about the desired matrimonial state.

Blake (1965) Scanzoni (1972) and others have discussed the importance of the strong and consistent correlation existing between female labor force participation and family size and size preference. Blake not only pointed out the importance of this correlation in terms of the alternative satisfactions of employed women but went on to investigate whether family size preferences precede or coincide with the intentions to work in youth. Using a sample of high school and college students she found that intentions to work for a prolonged period outside the home after marriage were strongly correlated with lower family size preferences. It was hypothesized that the coeds who utilized more effective medically distributed contraception would identify themselves more strongly as career women thus being more careful to avoid the crisis of pregnancy on educational and professional plans.

**Communication Level**

In a problem solving situation such as the prevention of pregnancy by a sexually active unmarried coed the level of communication she maintains concerning her sexual behavior and birth control may be a crucial determinant of her contraceptive acquisition. Hill et al (1959) investigated the importance of communication on family fertility and contraceptive
use in Puerto Rico. Their findings indicated that the amount and kind of communication maintained between the couple as well as the wife's interaction with her female friends and relatives were strongly correlated with effective birth control. It was hypothesized that coeds using medically distributed contraceptives (MDC) would have communicated with more people concerning their own sexual and contraceptive behavior. It was believed that their sexual behavior would be known by more people than non-MDC-users.

Social Interaction

Beyond more people simply having knowledge of their sexual and contraceptive behavior it was expected that the users would experience more specific birth control communication from significant others. For the purposes of this study the primary social interactions of college women were divided into three categories; their same sexed peers, their parents, and their boyfriends.

Studies indicate that college students who participate in premarital sexual intercourse associate with peers with similar attitudes and behavior, (Keats and Davis, 1970; Kanin, 1967; Reiss, 1967). Thus it was hypothesized that college women who used medically distributed contraception would know more peers with contraceptive behavior similar to their own, i.e. the MDC users would know more users and the non-users would know more sexually active women who like themselves were not using medically
distributed contraception. Similarly users would have received more direct and explicit encouragement to use the pill or other MDC from their friends and, probably most importantly, from their boyfriends.

It might be assumed that parents would reflect traditional sexual attitudes which would not show acceptance of these college women's sexual behavior and resulting contraceptive use. If the coed perceived acceptance from their peers and boyfriends, but non-acceptance from their parents, it would appear that they experienced an incongruence which Stryker defines as "conflicts in expectations deriving from significant others who themselves are in our ambience but do not relate to one another" (1964:142). Reiss (1967) found premarital permissiveness to be related to youth culture values and distance from ties to family. Since both the users and the non-users are sexually active it would stand to reason that both would attempt to minimize their family ties and communication with their parents at least concerning sexual matters. Therefore no relationship was expected between communication with parents and MDC use.

Methodology

One hundred and two never married college women, all enrolled at Ohio State University were interviewed. All of these had participated recently in sexual intercourse. Sixty-one of these coeds were referred
from a Planned Parenthood Clinic located close to campus. Fifty-four of these clinic referrals were using or were going to be using oral contraceptive pills. Six more were using the diaphragm and one the intrauterine device. Therefore, all of the students referred from Planned Parenthood were employing reliable methods of contraception specifically distributed by the medical profession.

Forty-one coeds interviewed were not using medically distributed contraceptives, hereafter referred to as MDC. Many of these were using a less reliable form or some combination of less reliable forms. The most commonly used methods of non-MDC-using coeds were coitus interruptus, condoms, and the rhythm technique. Although some condoms have high effectiveness their use was not considered comparable to MDC use because it is a male controlled method. Almost all coeds reporting its use indicated it was not consistently employed in all acts of coitus.

Twenty-one of the non-using coeds were referred for interviews from the student medical center gynecologist. Interviews with 20 other non-using coeds were arranged by asking some of the coeds being interviewed if they had friends who were having sexual intercourse but not using MDC. Because non-users were reached through these two different methods, a comparison of these subgroups was made. The only significant differences between
these groups was that the friend referrals knew more acquaintances who were not on MDC but having sexual intercourse. This finding probably reflects the sample bias inherent in the selection process.

There were obvious drawbacks and inherent biases to the methods used to make contact with sexually active coeds with specific contraceptive behavior. Although the availability of "the pill" through the Planned Parenthood Agency was a well publicized fact at this University it is still probable that women who went there represented a different group than those who saw a private physician. Nevertheless the unmarried coeds who went to Planned Parenthood probably perceived this agency as a non-threatening helpful resource. On the other hand the Student Medical Center was run by the University and likely to be perceived by the coeds as more threatening and authoritarian. Sexually involved coeds were seeking the service of the medical center because of problems of suspected pregnancy and genital infection. Therefore they came under duress instead of in the more voluntary situation of those attending the Planned Parenthood Clinic. There may even have been concern over whether the reason for their clinic visit would go on their college record. Despite these differences all except two of the interviewees appeared relaxed and fully cooperative. Even the two, one user and one non-user, who seemed initially quite nervous appeared to
relax as the interview went on. Most of the interviewees shrugged off assurances of anonymity as though unconcerned.

Besides the comparisons of the MDC users and non-users two subgroups who appeared to be at opposite extremes in their tendency to acquire medically distributed contraception were compared on all items. One group consisted of 22 users who obtained MDC either before their first experience of sexual intercourse or immediately thereafter. This group was labeled "early acquisition users." The second group were non-MDC-users who had not acquired a medically distributed contraceptive method two months after the research interview which had informed them of how they could obtain MDC. Factors unrelated to perceived accessibility obviously blocked MDC use by these women. This second group was called "continuing non-users." The results of these comparisons are reported below in conjunction with the major findings of this study.

Findings

Data collected concerning age, socio-economic status, religious affiliation, and dating and sexual experience of the coeds indicated that only slight non-significant differences existed between the users and non-users.

Knowledge and Perceived Accessibility

In support of the findings of Grinder (1966), and Angrist (1966) the coeds were found to be well informed concerning contraception whether users or non-
users. Similarly, there was no significant difference between the two groups of coeds concerning how accessible they perceived MDC to be to them considering their age and marital status. Perceived inaccessibility was not unfounded since a state law prohibits medical treatment to those under 21 without permission of their parents. This law would include the medical distribution of contraception.

Self Image

As shown in table #1, a significant positive association was found using the chi square test between MDC use and a primary identity with an occupational future. When the "continuing non-users" were compared to the "early acquisition users" this same association was found to be significant beyond the .005 level. On a related measure, plans beyond college that would prohibit or delay marriage were reported at a significantly higher rate by the MDC users.

The strong association \( (P < .005) \) found to exist between pregnancy fear and MDC use may have been a function of the degree of interference a pregnancy would have had on future employment as opposed to future marriage. A pregnancy and the resulting interruption of education and delay of employment would be far more destructive for the coeds with professional aspirations than those with marriage and motherhood goals. In the event that they become pregnant MDC users reported they
would be more likely to seek an abortion than marry, but the relationship was not statistically significant. The "continuing non-users" were significantly more likely to marry while the "early acquisition users" were significantly more likely to seek abortions ($p < .01$).

The coeds appeared to attempt to avoid negative self images in relation to their contraceptive behavior. When asked if they felt single women on the pill were more "promiscuous" than sexually active unmarrieds who were not on the pill the non-users tended to answer yes. The MDC users however felt there would be no differences between sexually active pill users and sexually active women not on the pill. The results were significant at the .05 level. Although some interviewees described behavior of others which they felt was promiscuous, none, no matter how varied her sexual partners and experiences, defined herself as being promiscuous.

Communication Level and Significant Other Interaction

A woman who communicates openly about her sexual behavior is likely to have more friends who are aware of her behavior than someone who is less communicative. A significant difference existed between the mean number of friends who knew the non-users were having premarital sexual intercourse (6.2) and the mean number of those with similar knowledge about the MDC using coeds (9.6). The $t$ score for the differences between these means is
significant beyond the .025 level.

Although the results were not significant the coeds were found to know more friends with contraceptive behavior similar to their own, i.e. MDC users knew more MDC users and non-users knew more sexually active women who were not using MDC. The non-users knew a mean number of 3.8 acquaintances who were using MDC. The mean known by the users was 6.2. The t score for the difference between the means was 1.94 which falls short of the 1.98 needed for significance. On the other hand non-users knew more acquaintances having sexual intercourse but not using MDC (5.3), than the users (4.6). This difference is in the expected direction since the users knew fewer people who were not users, but it falls far short of significance.

The users received more encouragement from their boyfriends and peers toward MDC use. A positive association between MDC use and boyfriend encouragement was significant beyond the .025 level (Table #2). A comparison of "continuing non-users" and "early acquisition users" showed this same association was significant at the .005 level. Girlfriend encouragement was not so strongly associated. Although the relationship was strong and in the expected direction, it fell short of significance. However, when the "continuing non-users and "early acquisition users" were compared, the association was significant beyond the .005 level.
with 15 of the 22 having girlfriend encouragement, but only one of the 15 

There were no significant differences concerning reported perceptions of parental attitudes toward premarital sexual relations and only a few coeds indicated their parents had specifically encouraged use of medically distributed contraception. However, users were significantly more likely to report that they thought their parents would prefer they use MDC than risk pregnancy if they knew the circumstances. There was also a significant positive association between MDC use and having voluntarily informed their parents of their sexual activity.

Discussion

Self Image

The findings of this study indicate that coeds that utilize more reliable MDC contraceptive measures prior to marriage are significantly more likely to perceive themselves as future professionals. Users were significantly more likely to be interested in pursuing an occupation and also to report plans beyond college that would prohibit or delay marriage. Thus it appears that the strong correlation previously noted between female employment and limiting fertility holds for the sexually active unmarried college women who are career orientated.

Seen as related to the self image variable was the
Strong association between pregnancy fear and MDC use and the weaker tendency for users to report they would seek abortion and non-users to report they would marry in the event of a pregnancy. Since there were no appreciable differences between the users and non-users on items concerning their interpersonal relationships with their boyfriends, such as the degree of emotional involvement or expectations that the relationship would lead to marriage, the tendency for users to seek abortions and non-users to choose marriage would appear to be linked to their self-image as career women.

Communication Level and Significant Other Interaction

The findings support the hypothesis that the users were more communicative about their sexual behavior as indicated by the significantly larger number of acquaintances who knew of their sexual behavior. Greater knowledge on the part of her friends would put them in a better position to encourage contraceptive use. Nevertheless girl friend encouragement was not found to be significantly associated to MDC use. Although the relationship was strong in the expected direction it was not significant except when the continuing non-users and early acquisition users were compared (P < .005).

Boyfriend encouragement of MDC use was the most strongly related of the social interaction variables. The importance of her partner's attitude is probably
not only a measure of relative influence, (his feelings, being more important to her than those of her girlfriends) but a reflection of the nature of the pregnancy avoidance problem which should be a mutually shared concern.

The role of parents as significant others in the use of medically distributed contraception needs investigation. Although the findings of this study are confusing they do indicate some interesting correlations. No associations were found concerning perceived attitudes of parents toward premarital sexual intercourse, and few coeds reported that their parents had specifically encouraged their use of MDC. However, differences did appear in the coed's perception of what her parents' reaction would be to their daughter's use of MDC. Users were significantly more likely to perceive that their parents would prefer them to use MDC than to risk pregnancy. Perhaps this is an indication that the parents of career minded women have, through stressing the value of employment and education, indicated their tacit approval of precautions which would protect against interruption of these pursuits.

Another indication of the role of parental interaction was found between MDC use and having voluntarily informed their parents of their sexual activity. Thus, it appears that the users actually had a higher level of communication with their parents concerning their own sexual behavior. This probably
was an indication of less incongruence between parental and peer value systems for the user coeds.

Conclusions

The purpose of this study was to survey the possible variables in the use of medically distributed contraception among never married coeds. The factors found to be most strongly associated with MDC use were self image and social interaction. Coeds whose self image was occupationally rather than maritally orientated were more likely to use MDC. MDC users knew more girlfriends who were having premarital sexual intercourse and more who were using MDC. The users' sexual behavior was also known by more of their acquaintances. More encouragement to use MDC from both boyfriends and girlfriends was experienced by the users. Finally, users were more likely to perceive that their parents would prefer they use MDC than risk pregnancy, and more likely to have voluntarily informed their parents of their sexual behavior.
Footnotes

1. Consumers Union (1966) rank ordered the effectiveness of different contraceptive methods from most to least effective as follows: 1. oral contraceptives; 2. diaphragm with cream or jelly; 3. condoms; 4. intrauterine device 5. rhythm (with thermometer); 6. foam, cream; 7. cream or jelly alone; 8. rhythm (calendar alone); 9. withdrawal; 10. douche.

2. Considering fear as a motivator, exposure of their sexual behavior by discovery of their acquisition of MDC might be an offsetting fear to that of pregnancy. The coeds' concerns about parents and others finding out were investigated. There were no significant differences and relatively little fear of exposure.
Addendum - Literature Review*

Research concerning contraceptive use and fertility has largely ignored the unmarried population. Although there is a wealth of popular speculation and homespun philosophy in the mass media and even "scientific literature" concerning why some unmarrieds use more effective contraceptive methods than others or why some do not use birth control at all, I was unable to find any sociological research dealing with this question.

Although not dealing specifically with this question there have been two related studies reported examining the adequacy and accuracy of the contraceptive knowledge of college coeds. Grinder and Schmitt (1966) in a study of 304 college coeds found that 86% had enough contraceptive information to protect themselves from premarital pregnancy, i.e., knowledge of one or more techniques. Fifty-six percent had knowledge of two or more techniques and 30% had knowledge of three or four techniques. They found that knowledge of female controlled contraceptives was strongly related to youth culture activities, i.e., age, dating, being in love and engaging in sexual intercourse. They also found that peer acquired contraceptive information was often as accurate and complete as book and class acquired

* I realize that making the literature review an addendum may give the impression that it was done after the research. This was not the case. It was placed here to facilitate readability in presentation at a conference.
knowledge. Parents were found to contribute little to the contraceptive knowledge of their children. Angrist (1966) in a study of 50 freshman females found that 45 of her subjects could specify three or more methods of contraception and 85% of her sample were judged to be high communicators concerning contraception.

Three researchers (Schofield, 1965; Packard 1968; and Wachtel and Taylor have reported on both the contraceptive knowledge and use of their respective samples. Studying London area adolescents fifteen to nineteen years of age, Schofield reported that 83% of his sample claimed to have some knowledge of birth control. "However, of the teenagers with experience of sexual intercourse less than half (43%) of the boys always used some form of birth control; about two-thirds (68%) had used contraceptives more than once or twice; and a quarter (25%) of the boys having sexual intercourse had never used any kind of birth-control (1965:106)". Far fewer girls used any birth-control methods. "A fifth (20%) said they always did, but it was not always clear whether this referred to precautions taken by the girl herself, or by her boyfriend. Well over half (61%) said they never took precautions and if this is added to those who occasionally used birth control methods, it is found that eight out of ten girls having sexual intercourse were at risk (1965:106)." Other data from this study showed
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that 51% of the experienced boys and 70% of the experienced girls had real fears of pregnancy yet they do almost nothing to take precautions nor are they deterred from permissive behavior.

Packard in a survey of 74 coeds in the Rocky Mountain area with an average age of 20½ years, about half of whom had at one time been pinned or engaged, summarized his findings as follows:

"About three-quarters of these coeds knew at least one unmarried female student who was on a steady regime of contraceptive pills. (Eleven knew of at least eight fellow students who were using the pills.) As for knowing women students who possessed contraceptive "devices" about half personally knew at least one such student. About 40% felt that the development of advanced contraceptive techniques had produced significant change in either sex attitudes or behavior among women students on their campus. Somewhat less than a fourth of these coeds indicated that they personally had ever followed a regime of taking contraceptive pills (1968:38)." "More than three-quarters of the girls confirmed that if they wanted to obtain birth-control pills locally, they would know how to go about it (1968-39)."

In 1967 Wachtel and Taylor surveyed 1,349 female students or 98% of the total coed population at Oberlin College. (To my knowledge this research is as yet unpublished.)
Four hundred and seventy-four or 35% of the sample indicated they had engaged in sexual intercourse. The percentage who had engaged varied from 20.6% of the incoming freshman to 53% in the senior class. Over 40% of the women with coital experience had used reliable prescription methods, the birth control pills and diaphragm. However these high reliability prescription methods were used by significantly more women in the upper three classes than the lower two (included incoming freshmen).

A study which comes closest to the intent of the one reported here was a psychological investigation by Lundy (1971) of personality correlates of contraceptive use among unmarried coeds. He found that female college students who reported using contraceptives displayed a greater degree of internalization and a smaller degree of dogmatism. He failed to find significant support for a third hypothesis that contraceptive users would exhibit a lower degree of self esteem. Unfortunately Lundy does not report his operational definition for contraceptive use as opposed to contraceptive non-use. Whether his definition is in terms of the more effective medically distributed contraception, as in this study, or whether a women who relied upon her partner to withdraw before ejaculation would be considered a use is unknown.
### TABLE 1

**STATED PREFERENCE FOR MARRIAGE OR OCCUPATION**

<table>
<thead>
<tr>
<th>Statement</th>
<th>F. Non-Users</th>
<th>F. Users</th>
<th>Statistical Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marriage</td>
<td>27</td>
<td>65.9</td>
<td>21 34.4 $\chi^2 = 10.31 &lt; .025$</td>
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<tr>
<td>Both important but marriage most</td>
<td>6</td>
<td>14.6</td>
<td>22 36.1</td>
</tr>
<tr>
<td>Both important but occupation most</td>
<td>5</td>
<td>12.2</td>
<td>10 16.4</td>
</tr>
<tr>
<td>Occupation</td>
<td>3</td>
<td>7.3</td>
<td>8 13.1</td>
</tr>
</tbody>
</table>

TOTAL 41 61
<table>
<thead>
<tr>
<th>Statement</th>
<th>F. Non-Users</th>
<th>F. Users</th>
<th>Statistical Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boyfriend against use</td>
<td>4</td>
<td>4</td>
<td>$\chi^2 = 9.94$</td>
</tr>
<tr>
<td></td>
<td>9.7%</td>
<td>6.6%</td>
<td>$P &lt; .025$</td>
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<tr>
<td>Boyfriend never discussed</td>
<td>11</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26.8%</td>
<td>8.2%</td>
<td></td>
</tr>
<tr>
<td>Boyfriend discussed, but gave no encouragement</td>
<td>12</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>29.3%</td>
<td>22.9%</td>
<td></td>
</tr>
<tr>
<td>Boyfriend encouraging</td>
<td>14</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>34.2%</td>
<td>62.3%</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>41</td>
<td>61</td>
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