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Patterns of Reproductive Outcome in a Longitudinal Sample of Aggressive, Withdrawn, and Aggressive-Withdrawn Females

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Abstract

Patterns of Reproductive Outcome in a Longitudinal Sample of Aggressive, Withdrawn, and Aggressive-Withdrawn Females

Patricia L. Peters

There is a paucity of research examining psycho-social outcomes for females identified as aggressive, withdrawn, or aggressive-withdrawn in childhood. When they have been studied, socially atypical females have generally been compared to socially atypical males on outcomes for which the males are known to be at risk (e.g., criminal activity, substance abuse). It seems intuitively likely that reproductive functioning (e.g., sexual activity, pregnancy) is an area of risk for these women. However, this area has been overlooked in the literature.

The present study focused on the reproductive outcomes of 853 females. In 1977-1978, when they were 7, 10, or 13 years old, the women had been identified, on the basis of peer nomination procedures, as Aggressive, Withdrawn, Aggressive-Withdrawn, or as belonging to a normative Contrast group. Medical records of the subjects were examined for the period 1981-1987 and the following categories of reproductive outcome were coded as present or absent in each subject's medical history: pregnancy, birth, pregnancy termination, birth control, gynecological problems, and sexually transmitted diseases. Comparison of each of the three socially atypical groups with the Contrast group revealed an increased risk of gynecological problems and use of birth

control among the Aggressive subjects. Aggressive-Withdrawn subjects evidenced increased risk for adolescent pregnancy and childbirth. In contrast, Withdrawn subjects were comparable to the normative subjects on all categories of reproductive outcome. The results suggest that peer-identified aggression and aggression-withdrawal are useful predictors of problematic reproductive functioning. Implications and limitations of the current findings are discussed.

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Patterns of Reproductive Outcome in a Longitudinal Sample of Aggressive, Withdrawn, and Aggressive-Withdrawn Females

Aggression and social withdrawal have consistently emerged as stable patterns of problematic behavior in childhood (Quay, 1986). The definition of aggression encompasses such externalizing behaviors as physical aggression against people and property, disruptiveness, and attention-seeking behavior. Social withdrawal is characterised by behaviors which isolate the self from others, such as avoidance, seclusiveness, timidity, shyness, and fearfulness (Serbin, Moskowitz, Schwartzman, & Ledingham, in press). Both longitudinal and cross-sectional studies of children's psycho-social development have used childhood aggression and withdrawal to predict adjustment in adolescence and adulthood. The literature has provided extensive evidence that children who display extremely atypical patterns of social behavior are at risk for later psycho-social disorders (Loeber, 1982; McCord, 1987; Parker & Asher, 1987). Recent studies have also focused on the co-occurrence of aggression and withdrawal in children. There is growing evidence that the combination of aggression and withdrawal in childhood is a clinically distinct behavior pattern, one that may be indicative of adult psychopathology (Ledingham, 1981; Milich & Landau, 1984).

Aggression, Withdrawal, and Aggression-Withdrawal in Males

The vast majority of studies investigating childhood patterns of atypical social behavior have focused on aggression in males, which has been found to be very stable and highly predictive of a variety of psycho-social difficulties (Loeber, 1982; Olweus, 1979). In particular, childhood aggression in males is predictive of juvenile offenses and adult criminality, with an early onset of aggressive behavior increasing the risk of delinquency (Loeber 1982; Havighurst, Bowman, Liddle, Matthews, & Pierce, 1962; Magnussen, Stattin, & Duner, 1983; Moskowitz, Crawley, & Schwartzman, 1989; Roff & Wirt, 1984).

The recent literature on aggression and withdrawal suggests that males who display this atypical pattern in childhood are at risk for juvenile delinquency and adult criminality. Whether this risk is greater for aggressive-withdrawn males than for aggressive-only males has yet to be determined. Studies by Kellam, Ensminger, & Brown (1987) and McCord (1987) found that the combination of shy and aggressive behavior was more predictive of delinquency and adult criminality than aggressive behavior alone. Moskowitz et al. (1989), in contrast, found a higher rate of contact with the courts for criminal activity among aggressive males than among aggressive-withdrawn males. Kellam et al. and McCord found the co-occurrence of aggression and withdrawal to be more predictive of drug use and alcoholism than

aggression by itself. Aggressive-withdrawn males also have difficulties with social relations in childhood, as they are more likely to be rejected by their peers than aggressive-only boys (Milich & Landau, 1984).

In terms of delinquency and adult criminality, the outcome for boys identified as withdrawn in childhood appears to be less problematic than for boys identified as aggressive or aggressive-withdrawn (Parker & Asher, 1987). Both McCord (1987) and Kellam et al. (1987) found that shy boys were least likely to become criminals or substance abusers. The latter study, however, found shyness by itself to be predictive of elevated levels of anxiety. It has been suggested that withdrawal or shyness without aggression may protect boys against subsequent criminal behavior and substance abuse. In combination with aggression, however, shyness appears to enhance the risk of criminal activity or substance use (Farrington, 1986; McCord, 1987).

Aggression, Withdrawal, and Aggression-Withdrawal in Females

Although a clinical literature exists which describes the negative outcomes of antisocial girls, there are very few empirical studies that have systematically examined outcomes for aggressive, withdrawn, and aggressive-withdrawn girls. The majority of investigations have failed to include girls in their samples (Parker & Asher, 1987). This may be due to the lower prevalence of extreme patterns of aggressive behavior in females and their generally lower

rate of referral for clinical assessment and treatment during childhood (Cass & Thomas, 1979). Recent epidemiological community-based studies, however, indicate that patterns of aggression and conduct disorder are more prevalent in girls than would be expected on the basis of clinic referral rates (Offord, in press). Extreme patterns of withdrawal in females may be overlooked by parents and teachers because they are unintrusive and are perceived as consistent with societal gender roles. In short, very little is known about the outcome for females who are socially atypical during childhood.

The few studies that have included aggressive, withdrawn, or aggressive-withdrawn females have generally compared them with similarly grouped males on a limited number of psycho-social outcomes. In certain areas, such as academic performance and intellectual functioning, sex differences have not been obtained. Results from the Concordia Risk Project, for example, found that girls and boys identified as aggressive in childhood were more likely to experience school failure and special class placement than members of a normative group (Ledingham & Schwartzman, 1984). At the time of identification, members of the aggressive group were functioning at an intellectual level comparable to the normative group. On measures of academic achievement, however, the aggressive girls and boys performed at a level below their nondeviant peers. Follow-

up testing was conducted six years later on a subsample of the original pool of subjects. The aggressive girls and boys obtained lower scores on intelligence tests than children in the normative group. For the aggressive children, this reflected a slower rate of cognitive development, in comparison with the normative children, over the 6-year period (Moskowitz & Schwartzman, 1988)

Further results from the Concordia study indicate that aggressive-withdrawn girls and boys had a higher incidence of school failure and special class placement than their nondeviant peers. Aggressive-withdrawn children performed at a below average level on intelligence tests at the time of initial identification and again at a 6-year follow-up (Moskowitz & Schwartzman, 1988). Aggressive-withdrawn boys and girls were more likely to have received psychiatric treatment than children in the normative group (Moskowitz & Schwartzman, 1989). They received more social service assistance for problems related to psycho-social adjustment than the other males and females in the sample (Beltempo, Schwartzman, Marchessault, & Moskowitz, 1990). Aggressive-withdrawn children also had fewer friends and were rated as less likeable than aggressive and nondeviant children (Feltham, Doyle, Schwartzman, & Serbin, 1985).

Withdrawn boys and girls in the Concordia sample rated themselves low on measures of school competence, despite adequate intelligence and academic achievement (Moskowitz &

Schwartzman, 1989).

Socially atypical females differ from their male peers in other areas of adolescent and adult functioning. Aggressive girls, for example, are less likely than aggressive boys to exhibit aggressive behavior as adults and to engage in delinquent activity or substance abuse (Kellam, Simon, & Ensminger, 1982; Lefkowitz, Eron, Walder, & Huesmann, 1977; Robins, 1986). Although aggression in girls is less predictive of the externalizing behaviors (e.g., delinquency, adult criminality, substance abuse) for which boys are known to be at high risk, aggression in girls is more predictive of internalizing disorders (e.g., depression, anxiety, somatic complaints). Females in the Epidemiological Catchment Area study with a history of conduct problems in childhood reported more psychiatric symptoms, particularly of a somatic nature, than did males with a history of conduct disorder (Robins, 1986).

Results from the Concordia Risk Project provide additional evidence of health problems for aggressive females. Women in the Aggressive group were greater consumers of nonpsychiatric medical treatment during a 4-year period, beginning when subjects were 11 to 17 years of age. Aggressive females received more medical treatment than women who had been identified as withdrawn, aggressive-withdrawn, and normative, and more than the aggressive males. The aggressive females had more gynecological

problems and more frequent treatments related to birth control than the other females in the sample. The aggressive females were also more likely to have had their pregnancies terminated (i.e., induced and spontaneous abortions) than aggressive-withdrawn and contrast females (Moskowitz & Schwartzman, 1989).

Aggressive-withdrawn females had a much higher rate of contact with the courts for criminal activity (9.1%), prior to 1987, than either aggressive or normative females (3.2% and 2.9%, respectively) (Moskowitz et al., 1989). Recent DSM-III-R diagnostic interviews on the Concordia sample found the aggressive-withdrawn females significantly more likely to have abused drugs and alcohol during adolescence than either the aggressive, withdrawn, or contrast group females, or the aggressive-withdrawn males (Schwartzman, Moskowitz, Serbin, & Ledingham, 1990).

A small number of studies indicate that withdrawn girls, in comparison with withdrawn boys, have a higher risk of developing psychiatric symptoms, particularly depression and anxiety, in adolescence and adulthood (Quay & LaGreca, 1986). Withdrawn females in the Concordia sample registered the highest rate of induced and spontaneous abortions during a 4-year period, beginning when subjects were 11 to 17 years of age (Moskowitz & Schwartzman, 1989).

Although the research findings have begun to discriminate the different pathways followed by males and

females who are socially atypical in childhood, there are a number of limitations to the extant literature. As mentioned earlier, the foremost problem is the exclusion of females from the majority of retrospective and prospective longitudinal investigations. Studies which have included female subjects have had very few of them and have compared them with socially atypical males rather than with female controls. Furthermore, females have been consistently compared against males on outcomes that are traditionally thought of as male (e.g., delinquency, criminality, substance abuse). This research approach has generally yielded less negative outcomes for socially atypical females, relative to their male counterparts. Evidence which points to "better" outcomes for females, however, has prompted researchers to question the choice of outcomes themselves. It may be that patterns of aggression, withdrawal, and aggression-withdrawal predict <u>different</u> rather than better outcomes for females (Robins, 1986). Thus it is imperative that females identified as aggressive, withdrawn, and aggressive-withdrawn be examined relative to female controls and that the study of outcomes be expanded to include other aspects of psycho-social functioning (Parker & Asher, 1987).

<u>Reproductive Functioning as a Psycho-Social Outcome</u>

An important area of adaptation that has been overlooked in the literature is that of reproductive

functioning. It seems intuitively likely that reproductive functioning is an area of risk for females who display deviant childhood patterns of social behavior. Reproductive functioning (e.g., early sexual activity, pregnancy, abortion) can be considered a psycho-social outcome which has implications for the woman's life course, as well as for her offspring. In particular, a woman's life course trajectory is more likely to be negatively affected by maladaptive patterns of reproductive functioning, such as early and unprotected sexual activity. Females who engage in sexual activity at a young age are at risk for a variety of gynecological conditions (e.g., Vaginitis, Pelvic Inflammatory Disease, Sexually Transmitted Diseases, Cervical Dysplasia) which, in turn, may increase the likelihood of subsequent gynecological problems (e.g., infertility and cervical cancer).

Numerous studies have documented the negative consequences of early pregnancy and childbirth for women and their children. Young mothers are more likely to drop out of high school and, even if they remain in school, are less likely to continue their education in college (Chilman, 1979; Mott & Marsiglio, 1985). Their limited educational attainment and single parent status make them less likely to find viable career opportunities and more likely to experience long-term unemployment and welfare dependency. This, in turn, places the young mother and her baby at great

risk for economic deprivation (Furstenberg, Brooks-Gunn, & Morgan, 1987; Moore, 1978). Marriages which follow an adolescent pregnancy often end in dissolution, further decreasing the prospects of economic stability for the young mother (Furstenberg et al., 1987).

Adolescent mothers are more likely to experience pregnancy and childbirth complications, and to bare low birth weight and medical risk babies (Furstenberg, Lincoln, & Menken, 1981). The babies themselves are more likely to be developmentally delayed, functioning at a lower cognitive level than children born to older mothers (Bronman, 1981; Field, 1981). Research findings indicate that young mothers are less adequate in their parenting, involving themselves less with their infants and engaging in less positive interaction with their babies (Culp, Culp, Osofsky, & Osofsky, 1989). Thus, the reproductive outcome of early pregnancy and childbirth has long-lasting consequences for both mother and child.

The Present Study

As indicated above, a serious limitation of the longitudinal studies on aggression, withdrawal, and aggression-withdrawal is the absence of information on reproductive functioning as an area of risk for socially atypical females. The present study examined the relationship between childhood patterns of deviant behavior and subsequent reproductive outcomes for a large sample of

female subjects. As part of the Concordia Risk project, these subjects were identified as Aggressive, Withdrawn, Aggressive-Withdrawn, or as belonging to a normative Contrast group. At the time of identification in 1977, subjects were 7, 10, and 13 years of age. Medical records were obtained for a 7 year period, beginning in 1981, which provided the following categories of reproductive outcome: pregnancy, birth, termination of pregnancy (i.e., induced and spontaneous abortions), birth control use, gynecological problems, and sexually transmitted diseases.

The hypotheses of the study centered around the assumptions that socially atypical girls are at risk for problematic reproductive functioning and that specific kinds of problematic reproductive functioning are associated with specific patterns of socially atypical behavior. Thus, the normative contrast group was included to highlight the areas of reproductive functioning which distinguished the socially atypical females from their nondeviant peers. Individual groups of females identified as Aggressive, Withdrawn, or Aggressive-Withdrawn were included to clarify the reproductive outcomes specific to each risk group.

Hypotheses

1) Given the problematic outcomes evidenced by the Aggressive-Withdrawn females in previous research with the Concordia sample (i.e., substance use, criminal activity, and social service use), it was hypothesized that

Aggressive-Withdrawn subjects would demonstrate an extreme pattern of problematic reproductive outcome, relative to the Contrast group. That is, Aggressive-Withdrawn subjects were expected to be at greater risk for pregnancy and birth at an early age.

2) Relative to the Contrast group, Aggressive females were expected to show a more problematic pattern of reproductive outcome, with replication of the previous findings of more gynecological problems, more pregnancy terminations, and greater birth control use.

3) It was hypothesized that the Withdrawn group would show a pattern of reproductive outcome similar to the Contrast group, with the exception of a greater risk for termination of pregnancy (based on the previous finding over a 4-year period).

Method

Subjects

Identification of the original sample. The Concordia Risk Project began with the screening in 1977 and 1978 of 4,109 students in Grades 1, 4, and 7. All children were attending French-language schools in Montreal at the time of identification. The number of boys and girls selected as subjects was approximately equal (844 boys and 914 girls), as was the number of children in each of the three grades.

Children were screened with a French translation of the Pupil Evaluation Inventory (PEI), a peer nomination instrument developed by Pekarik, Prinz, Liebert, Weintraub, and Neale (1976). A sociometric measure was selected for several reasons. Using peers to identify children at risk for adult maladjustment has been shown, in several studies, to be more valid and reliable than teacher and clinician ratings (Cowen, Pederson, Babigian, Izzo, & Trost, 1973; Roff, 1970). Peers enjoy a unique perspective as actual participant-observers of peer social interactions (Smith, 1967). Consequently, they may be in a better position to evaluate the status of their peers in terms of psychosocial functioning. In their position as evaluators, peers far outnumber teachers and clinicians, thereby increasing the power of the assessment procedure.

The PEI (see Appendix A) contains 35 items on the dimensions of aggression (items such as "those who pick

fights" and "those who are mean and cruel to other children"), withdrawal (items such as "those who are too shy to make friends" and "those who often don't want to play"), and likeability (items such as "those who help others" and "those who everybody likes"). For the purposes of the Concordia Risk Project, children were screened on the aggression and withdrawal dimensions only.

In each classroom, children rated the boys and girls on separate administrations. Children were instructed to nominate up to four boys and four girls (chosen from class lists) who were best described by each item of the peer inventory. The number of nominations for each child was summed for the aggression and withdrawal dimensions. Total nomination scores for the two scales were then subjected to a square root transformation to reduce skew. Finally, the transformed aggression and withdrawal scores were converted to $\underline{Z}$ scores for each sex within each class to control for the effects of differences in class size and sex differences in the baseline rates of aggression and withdrawal. This process enabled each child to be scored relative to appropriate norms for his or her own sex and age and resulted in approximately equal samples of girls and boys.

Children from the screening population were assigned to the Aggressive group ($\underline{N}$=198) if they had $\underline{Z}$ scores ($\underline{Z} \geq 1.65$) on the aggression dimension which placed them at or above the 95th percentile and $\underline{Z}$ scores ($\underline{Z} < 0.68$) on the withdrawal

dimension which placed them below the 75th percentile. Children in the Withdrawn group (N=220) had Z scores equal to or above the 95th percentile on the withdrawal dimension and Z scores below the 75th percentile on the aggression scale. Children selected for the Aggressive-Withdrawn group (N=238) registered Z scores equal to or above the 75th percentile on both the aggression and withdrawal dimensions. A Contrast group (N=1,114) was comprised of children whose Z scores fell between the 25th and 75th percentiles on both the aggression and withdrawal dimensions.

Present study. Subjects from the Concordia Risk Project have been followed since the time of identification, when they were 7, 10, and 13 years of age. The current study concerns the female subjects from the Concordia Risk Project, who, in 1990, are 20, 23, and 26 years of age. Of the 908 female subjects identified in 1977-1978 (see Table 1 for distribution by age group and peer group classification), medical records were obtained for 853 women, a retrieval rate of 95% (see Table 2 for distribution by age group and peer group classification).

Procedure

Through an agreement with the Regie de l'Assurance-Maladie du Quebec (RAMQ), provincial medical records of female subjects in the Concordia Risk Project were examined for the period from 1981 through 1987. The procedure was conducted at RAMQ headquarters and the results were

Table 1

Number of Potential Female Subjects by Classification Group and Grade at Time of Identification (1977-1978)

Grade in 1977-78	Peer Classification Group				
	Aggressive	Withdrawn	Agg.-With.	Contrast	Total
Grade 1	11	12	70	169	262
Grade 4	28	30	48	194	300
Grade 7	62	70	11	203	346
Total	101	112	129	566	908

Table 2

Distribution of Female Subjects in 1989 by Classification Group and Grade

Grade in 1977-78	Peer Classification Group				
	Aggressive	Withdrawn	Agg.-With.	Contrast	Total
Grade 1	11	10	68	163	252
Grade 4	27	30	46	180	283
Grade 7	59	68	8	183	318
Total	97	108	122	526	853

transferred to the project's data bank in denominalized form, meaning that the identification number was removed for each subject. Individual cases were grouped by sex, peer classification group (Aggressive, Withdrawn, Aggressive-Withdrawn, and Contrast) and age group (Grade 1, Grade 4, and Grade 7). This preserved the confidentiality of subjects' medical records, since the information obtained could not be linked directly to any individual in the sample. The medical records provided a record of all medical care occurring within the province during the 1981-1987 period for each of the 853 subjects. This covered the 11-17 year age range for the Grade 1 group, 14-20 years for the Grade 4 group and 17-23 years for the Grade 7 group. The records contained numeric codes specifying medical assessments (i.e., diagnostic information) and medical interventions. Assessments performed by medical practitioners of Quebec are classified according to the International Classification of Diseases (World Health Organization, 1978). Treatment codes are defined in the Manuel des Medecins et Omnipraticiens, the provincial classification guide of medical interventions (RAMQ, 1985).

The medical codes were used to construct six categories of reproductive outcome. Each of these outcomes was coded as either present or absent in the medical history of each subject: 1) Pregnancy (i.e., whether or not the woman had been seen for a medical visit related to pregnancy,

regardless of the outcome of her pregnancy), 2) Birth (i.e., whether or not the woman had given birth), 3) Pregnancy Termination (i.e., whether or not the woman had had an induced or spontaneous abortion), 4) Birth Control (i.e., whether or not the woman had been prescribed birth control 5) Gynecological Problems (i.e., whether or not the woman had been diagnosed as having, or had been treated for a gynecological problem directly related to the reproductive organs and genital tract; diagnosis and treatment of breast conditions were not included in this category), and 6) Sexually Transmitted Disease (i.e., whether or not the woman had been diagnosed as having, or had been treated for a sexually transmitted disease).

Results

To address the hypotheses of specific reproductive patterns for each risk group, relative to the contrast group, it was necessary to make separate comparisons of the risk groups with the contrast group. The relative risk ratio (RR) and the relative improvement over chance (RIOC) index (Loeber & Dishion, 1983) were calculated within the three age groups (i.e., subjects identified in Grade 1, Grade 4, Grade 7) for the 1981-1987 data, inclusive, and for each year separately. The year-by-year analyses identified the specific ages at which the risk groups deviated from the contrast group in terms of reproductive outcome, thereby clarifying the reproductive patterns distinctive to each risk group.

The risk ratio provides a method for comparison of the proportion in a risk group showing a specific outcome with the proportion in a contrast group showing the same outcome. A risk ratio of one indicates an equal proportion of the outcome in the risk and contrast groups, while a value greater than one indicates a greater proportion of the outcome in the risk group. In the latter case, a 95% confidence interval is created to evaluate the significance of the risk ratio. If the lower limit of the confidence interval falls above one, then the value obtained for the risk ratio is significant at the .05 level of probability. The relative improvement over chance index is a measure of predictive efficiency which takes into account the number of

correct predictions of an outcome made by chance alone. An RIOC value indicates an improvement in prediction over chance accuracy that is a percentage of its theoretical maximum (Parker & Asher, 1987). According to Loeber and Dishion (1983), RIOC values greater than 50% are very difficult to attain when using a single predictor. Risk Ratios are presented in Appendix B. Significant risk ratios and the corresponding RIOC values are summarized below for each risk group.

Aggressive Subjects

Subjects Identified in Grade 1 (n = 11). Calculation of the risk ratios across the 11 - 17 year age span revealed that members of the Aggressive group were significantly more likely to have had gynecological problems between ages 11 and 17 than subjects in the Contrast group (RR = 2.55; see Table 3). Subjects in the Aggressive group were also twice as likely to have used birth control between ages 11 and 17 than their Contrast group peers (RR = 2.04). These results should be viewed with caution, however, because of the small number of Aggressive subjects who were identified in Grade 1.

Subjects Identified in Grade 4 (n = 27). Between the ages of 14 and 20, subjects in the Aggressive group were significantly more likely to have had a sexually transmitted disease than subjects in the Contrast group (RR = 1.54; see Table 3). Year-by-year comparison of the Aggressive and

Table 3

Summary of Reproductive Outcomes Differentiating Aggressive and Contrast Subjects

Identified in	Reproductive Outcome	Age of Occurrence	%Agg./ %Contrast	Risk Ratio	RIOC (%)[a]
Grade 1[b]					
	Birth Control	11-17	36.4/17.8	2.04*	21.5
	Gynecological Problems	11-17	45.5/17.8	2.55*	32.2
Grade 4[c]					
	Birth Control	15	22.2/06.7	3.33*	23.3
	Gynecological Problems	16	33.3/15.0	2.22*	19.3
	STDs	14-20	55.6/36.1	1.54*	27.6
Grade 7[d]					
	Gynecological Problems	17	38.9/24.6	1.59*	15.1
	Birth Control	18	23.7/13.1	1.81*	16.5
	Gynecological Problems	20	23.7/13.1	1.81*	16.5
	Pregnancy	17-23	69.5/50.8	1.36*	31.6
	Birth Control	17-23	62.7/50.3	1.25*	20.1
	Gynecological Problems	17-23	78.0/65.6	1.19*	29.8

[a]RIOC = Relative Improvement Over Chance Index

[b]n = 11 Aggressive Subjects and 163 Contrast Subjects

[c]n = 27 Aggressive Subjects and 180 Contrast Subjects

[d]n = 59 Aggressive Subjects and 183 Contrast Subjects

* $p < .05$

Contrast groups revealed that Aggressive females were more than three times as likely to have used birth control at age 15 than Contrast females (RR = 3.33). The incidence of gynecological problems at age 16 was two times greater for Aggressive females than for Contrast females (RR = 2.22).

Subjects Identified in Grade 7 (n = 59). Across the 17 - 23 year age span, Aggressive females differed from their Contrast peers on three reproductive outcomes (see Table 3). Aggressive subjects were significantly more likely to have used birth control and to have had gynecological problems than Contrast subjects (RR = 1.25 and 1.19, respectively). Females in the Aggressive group were also more likely to have experienced pregnancy during this period of late adolescence and early adulthood (RR = 1.36). Year-by-year comparison of the Aggressive and Contrast subjects found the Aggressive females significantly more likely to have had a gynecological problem at age 17 (RR = 1.59) and to have used birth control at age 18 (RR = 1.81). At age 20, Aggressive subjects were almost twice as likely to have had a gynecological problem (RR = 1.81).

RIOC Index. Within the Aggressive group, the RIOC values corresponding to the significant risk ratios ranged from 15.1% for Gynecological Problems at age 17, to 32.2% for Gynecological Problems between ages 11 and 17 (see Table 3). The mean RIOC value was 23.0, which indicates that, on average, membership in the Aggressive group improved

prediction of a reproductive outcome by 23% above chance level. Average RIOC values calculated within each grade indicate that identification of aggression in Grade 1 improved prediction of a reproductive outcome by 26.9%. Identification of aggression in Grade 4 and Grade 7 improved prediction, on average, by 23.4% and 21.6%, respectively.

Summary. As predicted, members of the Aggressive group had an elevated rate of birth control use and gynecological problems, relative to the Contrast subjects. A comparison of the risk ratios for gynecological problems and birth control use across the three age groups revealed a greater risk for these outcomes in the younger age groups (i.e., subjects identified in Grade 1 and Grade 4). Contrary to expectations, Aggressive females did not register a higher rate of pregnancy termination when compared with Contrast group females over a 7-year period.

Two additional categories of reproductive outcome distinguished Aggressive from Contrast subjects: sexually transmitted diseases between ages 14 and 20, and pregnancy between ages 17 and 23. Pregnancy and STDs, taken together with gynecological difficulties, indicate a problematic pattern of reproductive outcome for females in the Aggressive group, relative to Contrast subjects.

Aggressive-Withdrawn Subjects

Subjects Identified in Grade 1 (n = 68). Between 11 and 17 years of age, Aggressive-Withdrawn subjects were

significantly more likely than their Contrast group peers to have used birth control and to have experienced gynecological problems (RR = 1.74 and 1.65, respectively; see Table 4).

Subjects Identified in Grade 4 (n = 46) . The risk ratios calculated for the 14 - 20 year age span identified Aggressive-Withdrawn subjects as significantly more likely to have experienced pregnancy (RR = 2.05) and birth (RR = 2.56), relative to their Contrast peers (see Table 4). At age 14, the rate of pregnancy among Aggressive-Withdrawn females was more than three times greater than among Contrast females (RR = 3.35). At age 19, Aggressive-Withdrawn subjects were almost four times as likely to have experienced pregnancy (RR = 3.91) and almost six times as likely to have given birth (RR = 5.87) than Contrast subjects. The incidence of childbirth among Aggressive-Withdrawn females was also significantly higher at age 20 (RR = 2.74).

Subjects Identified in Grade 7 (n = 8). The risk ratios did not identify this small group of Aggressive-Withdrawn subjects as registering significantly greater proportions of the reproductive outcomes than Contrast group subjects.

RIOC Index. The RIOC values corresponding to the significant risk ratios for the Aggressive-Withdrawn group ranged from 16.1% for Gynecological Problems between ages 11

Table 4

Summary of Reproductive Outcomes Differentiating Aggressive-Withdrawn and Contrast Subjects

Identified in	Reproductive Outcome	Age of Occurrence	%AggWith/ %Contrast	Risk Ratio	RIOC (%)[a]
Grade 1[b]					
	Birth Control	11-17	30.9/17.8	1.74*	17.8
	Gynecological Problems	11-17	29.4/17.8	1.65*	16.1
Grade 4[c]					
	Pregnancy	14	13.0/03.8	3.35*	32.4
	Pregnancy	19	17.4/04.4	3.91*	37.2
	Birth	19	13.0/02.2	5.87*	49.8
	Birth	20	15.2/05.5	2.74*	26.1
	Pregnancy	14-20	47.8/23.3	2.05*	27.2
	Birth	14-20	37.0/14.4	2.56*	24.1

[a]RIOC = Relative Improvement Over Chance Index

[b]n = 68 Aggressive-Withdrawn Subjects and 163 Contrast Subjects

[c]n = 46 Aggressive-Withdrawn Subjects and 180 Contrast Subjects

* $p < .05$

and 17, to 49.8% for Birth at age 19 (see Table 4). The mean RIOC value of 28.5 reflects an average improvement in prediction of a reproductive outcome that is 28.5% above chance level. Membership in the Aggressive-Withdrawn group identified in Grade 1 increased prediction of a reproductive outcome by 17.0%, on average. Identification of aggression-withdrawal in Grade 4 improved prediction, on average, by 32.8%.

Summary. Subjects who had been identified as Aggressive-Withdrawn in Grade 4 evidenced an elevated risk of pregnancy and birth during adolescence. This confirms the hypothesis of an extreme pattern of problematic reproductive outcome for Aggressive-Withdrawn subjects. Although the pattern of pregnancy and childbirth was not evident in the group of Aggressive-Withdrawn subjects identified in Grade 1, these women were at risk during adolescence for gynecological problems and birth control use.

Withdrawn Subjects

As predicted, members of the Withdrawn group did not emerge as being significantly more at risk than Contrast subjects for the majority of reproductive outcomes. Contrary to expectations, however, the current results failed to replicate the previous finding of an elevated rate of pregnancy termination among Withdrawn subjects.

Discussion

The present study has identified distinctive patterns of problematic reproductive outcome among women who were nominated as aggressive or aggressive-withdrawn in childhood. While not demonstrating that either pattern is directly causal of a problematic reproductive outcome, the present findings do highlight reproductive functioning as a negative psycho-social outcome associated with aggression and aggression-withdrawal in women.

As anticipated, subjects in the Aggressive group encountered gynecological problems and used birth control at a higher rate than their normative peers. The elevated incidence of gynecological problems and birth control use among Aggressive subjects identified in Grade 1, Grade 4, and Grade 7 suggests a continuity of sexual activity for the Aggressive females from early adolescence to early adulthood. The use of birth control among Aggressive subjects implies an awareness of the consequences of sexual activity and an effort to take precautions against these consequences. The efficiency of their birth control efforts can not be determined directly from the data, but the elevated levels of sexually transmitted diseases and pregnancy in the Grade 4 and Grade 7 groups suggest some inconsistencies in their use of birth control.

Among the Aggressive subjects, the failure to replicate the previous finding of an elevated incidence of pregnancy

termination may reflect a change in birth control patterns during the additional 3-year period covered by the present study. Perhaps Aggressive subjects, as they became older, took greater steps to prevent unwanted conception, thereby preventing pregnancy termination, rather than taking steps to interfere with pregnancy once it had occurred. It is also possible that during the 3-year period, the incidence of pregnancy termination remained constant among Aggressive subjects and increased among Contrast subjects.

As hypothesized, the reproductive outcome for Aggressive-Withdrawn subjects was more problematic, in the sense of having longer-term consequences, than for Aggressive subjects. Females in the Aggressive-Withdrawn group, like their Aggressive peers, experienced difficulties of a gynecological nature and used birth control during adolescence. In contrast to the Aggressive subjects, however, Aggressive-Withdrawn females were at a greater risk during adolescence for pregnancy and birth. While not diminishing the serious nature of the reproductive outcomes identified for the Aggressive subjects, the occurrence of pregnancy and birth for Aggressive-Withdrawn subjects has more immediate and long-lasting repercussions for these women and their children. The fact that the higher rate of pregnancy and birth was not accompanied by a higher rate of birth control and contraceptive use suggests that sexual activity may not have been premeditated or that Aggressive-

Withdrawn females did not take effective precautions against the consequences of sexual activity.

The incidence of adolescent pregnancy and birth, and the inefficiency of birth control use, may reflect a cognitive deficiency among Aggressive-Withdrawn subjects. During childhood and adolescence these subjects registered below average functioning on intelligence tests (Moskowitz & Schwartzman, 1988). This presumably reflects a general deficit in cognitive functioning which would interfere with their ability to anticipate the consequences of their behavior and to plan for these consequences.

Pregnancy and childbirth among Aggressive-Withdrawn subjects during adolescence may also reflect the influence of peer relations. At the time of identification, Aggressive-Withdrawn subjects were rated by peers as least likeable and popular (Feltham et al., 1985). This negative peer-evaluation may have continued into adolescence, possibly influencing Aggressive-Withdrawn females to engage in sexual activity to bring about changes in their social status.

The present study indicates that peer-identified withdrawal, in contrast to peer-identified aggression and aggression-withdrawal, is not predictive of a problematic reproductive outcome for females. Contrary to expectations, the pattern of induced and spontaneous abortions among Withdrawn subjects, which had emerged during the 1981-1984

period, did not extend into the 7-year period covered by the present study. It is not evident whether this reflects a relative decrease in the incidence of pregnancy termination among Withdrawn subjects, or a relative increase among Contrast subjects. Perhaps, as suggested for the Aggressive females, Withdrawn females took greater precautions, as they grew older, to prevent conception from occurring, thereby reducing their risk of pregnancy termination.

For the Aggressive-Withdrawn females, the present findings, taken in conjunction with other results from the Concordia Risk Project, paint a negative portrait of their functioning during adolescence. Their rate of criminal activity, as inferred from court appearances (Moskowitz et al., 1989), substance abuse (Schwartzman et al., 1990), social service use (Beltempo et al., 1990), and pregnancy and childbirth, identifies Aggressive-Withdrawn females as at risk for a variety of negative psycho-social outcomes during adolescence. While adolescent pregnancy and childbirth can be detrimental to both mother and infant, abuse of substances and criminal activity during pregnancy and childrearing greatly increase the potential for negative outcomes.

Clearly, the females identified as aggressive-withdrawn in childhood require specialized intervention strategies which focus on a broad range of problematic outcomes. It is significant and encouraging that identification by peers can

occur in early to middle childhood so that immediate steps can be implemented to prevent subsequent problems. With regard to interventions aimed at reproductive functioning, it is probable that a school-based program of rudimentary sexual education would not be sufficient to address the needs of aggressive-withdrawn females. Rather, a more individually tailored program would be necessary, one offering medical information and services, and reproductive health counselling, in addition to focusing on potential issues of substance abuse and criminal behavior. The specific interventions would have to be tailored to the cognitive level of the targeted females, with an emphasis placed on their understanding of the immediate consequences of their behavior and their planning for these consequences. This approach to preventive intervention might best be accomplished through a joint effort of school and community-based programs, the latter resource being particularly important for aggressive-withdrawn girls who drop out of school during adolescence.

The present study is limited in scope by the small number of Aggressive and Withdrawn subjects who were identified in Grade 1 and the small number of Aggressive-Withdrawn subjects who were identified in Grade 7. This discrepancy in the number of socially atypical females identified at different ages may reflect the developmental course of atypical patterns of social behavior in girls.

Perhaps the combination of aggression and withdrawal emerges during early childhood, while aggression and withdrawal, as separate patterns, do not emerge in girls until later childhood and adolescence. Regardless of the developmental course of these behavior patterns, it is unfortunate that a small number of Aggressive-Withdrawn subjects were identified in Grade 7. Consequently, it is not known whether the reproductive history of adolescent pregnancy and birth observed in the Grade 4 group is unique to this age group or whether it also occurred in the older Aggressive-Withdrawn subjects. Future research with the Aggressive-Withdrawn subjects identified in Grade 1, however, will provide an opportunity to compare the incidence of adolescent pregnancy and birth across age groups.

Although childhood patterns of aggression and aggression-withdrawal are predictive of a problematic reproductive outcome, it is possible that socio-economic status may be associated to an equal or even greater degree with reproductive outcome for socially atypical females. The role of SES in early sexual activity and pregnancy has been demonstrated among females who displayed childhood patterns of socially normative behavior (Furstenberg et al., 1987); however, the contribution of SES to a negative reproductive outcome has not been examined in a sample of females with histories of socially atypical behavior. Future research in this area, therefore, would benefit from

the addition of a measure of socio-economic status.

The current study highlights the need for continued investigation of negative reproductive outcome as an area of risk for females displaying childhood patterns of aggression and aggression-withdrawal. It is necessary to replicate the identification of reproductive functioning as an area of risk for aggressive and aggressive-withdrawn females and to further identify the females within these deviant groups who are at greatest risk for reproductive difficulties. This will require the systematic investigation of the role of other variables, such as SES, peer relations, and cognitive functioning, in the outcome of problematic reproductive functioning for aggressive and aggressive-withdrawn females.

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Appendix A

English Translation of the Pupil Evaluation Inventory

1. Example question.

Aggression Items

3. Those who can't sit still.
4. Those who try to get other people into trouble.
7. Those who act stuck-up and think they are better than everyone else.
8. Those who play the clown and get others to laugh.
9. Those who start a fight over nothing.
12. Those who tell other children what to do.
15. Those who always mess around and get into trouble.
16. Those who make fun of people.
18. Those who do strange things.
20. Those who bother people when they're trying to work.
21. Those who get mad when they don't get their way.
22. Those who don't pay attention to the teacher.
23. Those who are rude to the teacher.
26. Those who act like a baby.
27. Those who are mean and cruel to other children.
29. Those who give dirty looks.
30. Those who want to show off in front of the class.
31. Those who say they can beat everybody up.
33. Those who exaggerate and make up stories.
34. Those who complain nothing seems to make them happy.

Withdrawal Items

5. Those who are too shy to make friends easily.
6. Those whose feelings are too easily hurt.

10. Those who never seem to be having a good time.
11. Those who are upset when called on to answer questions in class.
13. Those who are usually chosen last to join in group activities.
17. Those who have very few friends.
24. Those who are unhappy or sad.
28. Those who often don't want to play.
32. Those who aren't noticed much.

Likeability Items

2. Those who help others.
14. Those who are liked by everyone.
19. Those who are your best friends.
25. Those who are especially nice.
35. Those who always seem to understand things.

Appendix B

Risk Ratios for Aggressive, Aggressive-Withdrawn, and Withdrawn Subjects

Table B - 1

Risk Ratios for Aggressive Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 1[a]	Pregnancy	11	-	-
		12	-	-
		13	-	-
		14	-	-
		15	3.70	0.63-21.67
		16	-	-
		17	-	-
		11-17	1.48	0.29- 7.70
	Birth	11	-	-
		12	-	-
		13	-	-
		14	-	-
		15	-	-
		16	-	-
		17	-	-
		11-17	-	-
	Pregnancy Termination	11	-	-
		12	-	-
		13	-	-

(table continues)

Table B - 1

Risk Ratios for Aggressive Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 1	Pregnancy Termination	14	-	-
		15	4.94	0.79-30.76
		16	-	-
		17	-	-
		11-17	2.11	0.39-11.38
	Birth Control	11	-	-
		12	-	-
		13	-	-
		14	-	-
		15	7.49	0.61-21.05
		16	14.82	0.99-98.32
		17	1.48	0.49- 4.48
		11-17	2.04*	1.10- 4.17
	Gynecological Problems	11	-	-
		12	14.82	0.56-70.74
		13	7.41	0.96-27.99
		14	2.47	0.45-13.54
		15	-	-
		16	14.82	1.00-98.32

(table continues)

Table B - 1

Risk Ratios for Aggressive Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 1	Gynecological Problems	17	2.47	0.78- 7.78
		11-17	2.55*	1.39- 4.70
	STDs	11	1.06	0.21- 5.37
		12	-	-
		13	1.85	0.60- 5.69
		14	1.14	0.22- 5.81
		15	1.35	0.26- 6.94
		16	-	-
		17	-	-
		11-17	1.02	0.52- 2.01
Grade 4[b]	Pregnancy	14	-	-
		15	1.11	0.19- 6.36
		16	2.22	0.34-14.40
		17	1.67	0.47- 5.85
		18	1.25	0.47- 3.32
		19	1.67	0.47- 5.85
		20	1.18	0.44- 3.11
		14-20	1.11	0.62- 1.98

(table continues)

Table B - 1

Risk Ratios for Aggressive Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 4	Birth	14	-	-
		15	-	-
		16	-	-
		17	-	-
		18	1.21	0.36- 4.10
		19	3.33	0.84-13.30
		20	-	-
		14-20	1.03	0.45- 2.32
	Pregnancy Termination	14	-	-
		15	3.33	0.46-24.29
		16	3.33	0.46-24.49
		17	2.22	0.34-14.40
		18	1.33	0.23- 7.83
		19	-	-
		20	-	-
		14-20	1.75	0.83- 3.73
	Birth Control	14	-	-
		15	3.33*	1.56- 7.05
		16	0.67	0.26- 1.70

(table continues)

Table B - 1

Risk Ratios for Aggressive Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 4	Birth Control	17	2.22	1.00- 4.84
		18	0.35	0.07- 1.83
		19	-	-
		20	1.67	0.47- 5.85
		14-20	1.39	1.00- 1.91
	Gynecological Problems	14	2.67	1.00- 6.64
		15	1.43	0.74- 2.76
		16	2.22*	1.30- 3.79
		17	1.40	0.61- 3.25
		18	1.33	0.50- 3.56
		19	-	-
		20	1.11	0.49- 2.53
		14-20	1.17	0.84- 1.63
	STDs	14	1.43	0.53- 3.84
		15	2.86	1.00- 5.91
		16	0.89	0.27- 2.92
		17	0.48	0.09- 2.53
		18	2.67	1.00- 6.64
		19	-	-

(table continues)

Table B - 1

Risk Ratios for Aggressive Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 4	STDs	20	1.21	0.36- 4.10
		14-20	1.54*	1.11- 2.13
Grade 7[c]	Pregnancy	17	1.27	0.83- 1.94
		18	1.62	0.93- 2.85
		19	1.45	0.71- 2.95
		20	1.77	0.89- 3.52
		21	0.86	0.39- 1.91
		22	1.24	0.65- 2.36
		23	1.81	1.00- 2.97
		17-23	1.36*	1.14- 1.65
	Birth	17	1.29	0.56- 2.99
		18	2.33	0.99- 5.46
		19	1.55	0.65- 3.69
		20	2.41	1.00- 5.32
		21	0.95	0.39- 2.37
		22	1.24	0.48- 3.28
		23	1.72	0.95- 3.14
		17-23	1.41	1.00- 1.85

(table continues)

Table B - 1

Risk Ratios for Aggressive Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 7	Pregnancy Termination	17	3.10	0.31-31.35
		18	1.55	0.21-11.45
		19	1.03	0.16- 6.80
		20	1.03	0.16- 6.80
		21	3.10	0.61-15.77
		22	0.39	0.07- 2.18
		23	2.33	0.68- 7.97
		17-23	1.47	0.79- 2.73
	Birth Control	17	-	-
		18	1.81*	1.10- 2.97
		19	1.16	0.75- 1.79
		20	1.63	0.90- 2.96
		21	0.58	0.29- 1.16
		22	1.16	0.39- 3.45
		23	0.77	0.38- 1.58
		17-23	1.23*	1.02- 1.53
	Gynecological Problems	17	1.59*	1.13- 2.23
		18	1.01	0.68- 1.52
		19	1.02	0.70- 1.47

(table continues)

Table B - 1

Risk Ratios for Aggressive Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 7	Gynecological Problems	20	1.81*	1.10- 2.97
		21	1.69	0.99- 2.89
		22	1.03	0.36- 3.01
		23	1.68	1.00- 2.80
		17-23	1.19*	1.03- 1.37
	STDs	17	0.67	0.31- 1.46
		18	1.48	0.83- 2.64
		19	0.99	0.53- 1.85
		20	0.72	0.26- 1.99
		21	1.00	0.36- 3.01
		22	0.52	0.09- 3.00
		23	0.78	0.22- 2.78
		17-23	0.99	0 1.34

[a]n = 11 Aggressive Subjects

[b]n = 27 Aggressive Subjects

[c]n = 59 Aggressive Subjects

* $p < .05$

Table B - 2

Risk Ratios for Aggressive-Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 1[a]	Pregnancy	11	-	-
		12	2.40	0.24-24.25
		13	-	-
		14	-	-
		15	-	-
		16	1.44	0.44- 4.67
		17	3.72	1.00-71.52
		11-17	1.92	0.91- 4.03
	Birth	11	-	-
		12	-	-
		13	-	-
		14	-	-
		15	-	-
		16	-	-
		17	4.79	0.65-35.45
		11-17	7.19	0.97-47.34
	Pregnancy Termination	11	-	-
		12	-	-
		13	-	-

(table continues)

Table B - 2

Risk Ratios for Aggressive-Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 1	Pregnancy Termination	14	-	-
		15	-	-
		16	0.60	0.10- 3.71
		17	7.19	1.00-47.34
		11-17	1.37	0.50- 3.74
	Birth Control	11	-	-
		12	-	-
		13	-	-
		14	1.20	0.38- 3.74
		15	2.40	0.96- 6.01
		16	9.98	0.95-71.52
		17	1.56	0.91- 2.66
		11-17	1.74*	1.16- 2.61
	Gynecological Problems	11	1.20	0.29- 4.88
		12	1.20	0.16- 8.86
		13	1.80	0.52- 6.17
		14	2.00	0.76- 5.26
		15	0.96	0.37- 2.46
		16	1.20	0.16- 8.86

(table continues)

Table B - 2

Risk Ratios for Aggressive-Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 1	Gynecological Problems	17	1.40	0.66- 2.95
		11-17	1.65*	1.09- 2.50
	STDs	11	0.86	0.38- 1.95
		12	0.80	0.32- 2.00
		13	1.05	0.52- 2.13
		14	0.37	0.11- 1.26
		15	0.22	0.04- 1.19
		16	1.60	0.36- 7.04
		17	1.20	0.55- 2.63
		11-17	0.87	0.61- 1.23
Grade 4[b]	Pregnancy	14	3.35*	1.40- 8.04
		15	1.96	0.63- 6.06
		16	3.91	1.00-14.58
		17	1.96	0.74- 5.16
		18	1.22	0.55- 2.71
		19	3.91*	1.80- 8.50
		20	2.07	1.00- 3.86
		14-20	2.05*	1.46- 2.87

(table continues)

Table B - 2

Risk Ratios for Aggressive-Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 4	Birth	14	-	-
		15	-	-
		16	3.91	0.77-19.82
		17	5.22	0.97-17.79
		18	1.07	0.38- 3.01
		19	5.87*	2.10-16.38
		20	2.74*	1.28- 5.88
		14-20	2.56*	1.66- 3.95
	Pregnancy Termination	14	-	-
		15	1.96	0.27-14.40
		16	3.91	0.77-19.82
		17	-	-
		18	0.78	0.13- 4.65
		19	0.98	0.16- 6.03
		20	0.98	0.27- 3.49
		14-20	1.24	0.60- 2.54
	Birth Control	14	-	-
		15	0.65	0.19- 2.22
		16	0.52	0.23- 1.20

(table continues)

Table B - 2

Risk Ratios for Aggressive-Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 4	Birth Control	17	1.83	0.90- 3.69
		18	1.44	0.73- 2.83
		19	1.96	0.27-14.40
		20	0.98	0.45- 2.13
		14-20	0.98	0.70- 1.37
	Gynecological Problems	14	1.17	0.41- 3.35
		15	0.56	0.24- 1.29
		16	1.01	0.53- 1.92
		17	1.24	0.60- 2.54
		18	1.30	0.58- 2.92
		19	1.30	0.35- 4.86
		20	0.49	0.19- 1.29
		14-20	0.83	0.59- 1.17
	STDs	14	1.12	0.46- 2.73
		15	1.40	0.62- 3.15
		16	1.04	0.43- 2.53
		17	0.84	0.31- 2.30
		18	1.17	0.41- 3.35
		19	1.30	0.20- 8.55

(table continues)

Table B - 2

Risk Ratios for Aggressive-Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 4	STDs	20	1.78	0.76- 4.14
		14-20	1.08	0.77- 1.53
Grade 7[C]	Pregnancy	17	1.17	0.42- 3.30
		18	3.27	1.00- 7.44
		19	-	-
		20	3.27	0.97- 9.74
		21	-	-
		22	-	-
		23	-	-
		17-23	1.23	0.77- 1.96
	Birth	17	1.91	0.38- 9.50
		18	5.72	1.00-18.18
		19	-	-
		20	2.54	0.50-12.96
		21	-	-
		22	-	-
		23	-	-
		17-23	1.07	0.50- 2.31

(table continues)

Table B - 2

Risk Ratios for Aggressive-Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 7	Pregnancy Termination	17	4.83	0.96-25.48
		18	-	-
		19	-	-
		20	7.63	1.00-46.32
		21	-	-
		22	-	-
		23	-	-
		17-23	2.41	0.83- 7.01
	Birth Control	17	-	-
		18	-	-
		19	-	-
		20	1.20	0.25- 5.84
		21	-	-
		22	-	-
		23	-	-
		17-23	0.25	0.05- 1.16
	Gynecological Problems	17	1.53	0.70- 3.33
		18	0.93	0.33- 2.61
		19	0.42	0.09- 1.96

(table continues)

Table B - 2

Risk Ratios for Aggressive-Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 7	Gynecological Problems	20	-	-
		21	2.08	0.72- 6.00
		22	-	-
		23	-	-
		17-23	0.95	0.60- 1.51
	STDs	17	1.99	0.69- 5.73
		18	1.09	0.23- 5.26
		19	1.83	0.64- 5.24
		20	-	-
		21	2.54	0.50-12.96
		22	-	-
		23	-	-
		17-23	1.22	0.67- 2.22

[a]n = 68 Aggressive-Withdrawn Subjects

[b]n = 46 Aggressive-Withdrawn Subjects

[c]n = 8 Aggressive-Withdrawn Subjects

* p < .05

Table B - 3

Risk Ratios for Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 1[a]	Pregnancy	11	-	-
		12	-	-
		13	-	-
		14	-	-
		15	-	-
		16	-	-
		17	-	-
		11-17	-	-
	Birth	11	-	-
		12	-	-
		13	-	-
		14	-	-
		15	-	-
		16	-	-
		17	-	-
		11-17	-	-
	Pregnancy Termination	11	-	-
		12	-	-
		13	-	-

(table continues)

Table B - 3

Risk Ratios for Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 1	Pregnancy Termination	14	-	-
		15	-	-
		16	-	-
		17	-	-
		11-17	-	-
	Birth Control	11	-	-
		12	-	-
		13	-	-
		14	2.72	0.50-14.78
		15	-	-
		16	-	-
		17	-	-
		11-17	0.56	0.12- 2.74
	Gynecological Problems	11	-	-
		12	-	-
		13	-	-
		14	-	-
		15	1.63	0.32- 8.40
		16	-	-

(table continues)

Table B - 3

Risk Ratios for Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 1	Gynecological Problems	17	-	-
		11-17	0.56	0.12- 2.74
	STDs	11	1.16	0.23- 5.86
		12	1.36	0.27- 6.91
		13	2.04	0.67- 6.19
		14	1.13	0.22- 4.83
		15	1.48	0.29- 7.58
		16	-	-
		17	-	-
		11-17	1.41	0.81- 2.43
Grade 4[b]	Pregnancy	14	-	-
		15	1.00	0.17- 5.74
		16	-	-
		17	0.75	0.14- 4.16
		18	1.13	0.42- 3.01
		19	0.75	0.14- 4.16
		20	0.70	0.22- 2.31
		14-20	0.86	0.45- 1.63

(table continues)

Table B - 3

Risk Ratios for Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 4	Birth	14	-	-
		15	-	-
		16	-	-
		17	2.00	0.31-13.00
		18	1.09	0.32- 3.70
		19	1.50	0.25- 9.17
		20	-	-
		14-20	0.46	0.14- 1.48
	Pregnancy Termination	14	-	-
		15	3.00	0.41-21.99
		16	-	-
		17	-	-
		18	1.20	0.20- 7.06
		19	-	-
		20	1.50	0.43- 5.28
		14-20	1.26	0.54- 2.94
	Birth Control	14	-	-
		15	-	-
		16	0.60	0.23- 1.54

(table continues)

Table B - 3

Risk Ratios for Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 4	Birth Control	17	1.60	0.67- 3.81
		18	0.95	0.36- 2.50
		19	3.00	0.41-21.91
		20	1.50	0.70- 3.19
		14-20	0.67	0.40- 1.12
	Gynecological Problems	14	0.60	0.11- 3.27
		15	0.43	0.13- 1.37
		16	0.22	0.04- 1.15
		17	0.63	0.19- 2.05
		18	0.40	0.08- 2.12
		19	3.00	0.98- 9.17
		20	1.25	0.60- 2.62
		14-20	0.90	0.61- 1.33
	STDs	14	0.86	0.26- 2.85
		15	1.29	0.48- 3.48
		16	0.40	0.08- 2.12
		17	0.43	0.08- 2.28
		18	1.20	0.35- 4.11
		19	-	-

(table continues)

Table B - 3

Risk Ratios for Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 4	STDs	20	-	-
		14-20	0.65	0.37- 1.14
Grade 7[c]	Pregnancy	17	0.69	0.40- 1.18
		18	1.54	0.89- 2.66
		19	1.97	1.00- 3.63
		20	1.35	0.65- 2.78
		21	1.35	0.72- 2.53
		22	1.48	0.84- 2.62
		23	1.35	0.79- 2.29
		17-23	1.07	0.86- 1.33
	Birth	17	0.67	0.24- 1.90
		18	2.02	0.86- 4.76
		19	1.61	0.71- 3.65
		20	1.79	0.78- 4.13
		21	1.45	0.69- 3.02
		22	1.88	0.87- 4.09
		23	1.64	0.92- 2.95
		17-23	1.22	0.92- 1.62

(table continues)

Table B - 3

Risk Ratios for Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 7	Pregnancy Termination	17	-	-
		18	6.73	1.00-26.12
		19	3.59	1.00-12.33
		20	-	-
		21	1.35	0.18- 9.95
		22	1.35	0.51- 3.58
		23	1.35	0.33- 5.49
		17-23	1.84	1.00- 3.17
	Birth Control	17	-	-
		18	0.67	0.33- 1.37
		19	0.87	0.55- 1.40
		20	0.57	0.24- 1.36
		21	0.50	0.25- 1.01
		22	-	-
		23	1.00	0.55- 1.84
		17-23	0.79	0.60- 1.04
	Gynecological Problems	17	0.72	0.44- 1.16
		18	0.99	0.67- 1.46
		19	0.69	0.44- 1.06

(table continues)

Table B - 3

Risk Ratios for Withdrawn Subjects

Identified in	Reproductive Outcome	Age of Occurrence	Risk Ratio	Confidence Interval
Grade 7	Gynecological Problems	20	0.67	0.33- 1.37
		21	0.98	0.52- 1.85
		22	1.20	0.46- 3.13
		23	0.67	0.33- 1.37
		17-23	0.78	0.63- 0.97
	STDs	17	0.82	0.42- 1.60
		18	1.15	0.63- 2.13
		19	0.75	0.39- 1.46
		20	0.62	0.22- 1.74
		21	1.20	0.46- 3.13
		22	-	-
		23	2.02	0.86- 4.76
		17-23	0.90	0.66- 1.21

[a]n = 10 Withdrawn Subjects

[b]n = 30 Withdrawn Subjects

[c]n = 68 Withdrawn Subjects