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# Abuse of pregnant adolescents : a study of prevalence and associated factors

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ABUSE OF PREGNANT ADOLESCENTS:  
A STUDY OF PREVALENCE  
AND ASSOCIATED FACTORS

LISA RENEE EILAND

YALE UNIVERSITY

2000

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## **Abstract**

# **ABUSE OF PREGNANT ADOLESCENTS: A STUDY OF PREVALENCE AND ASSOCIATED FACTORS**

Lisa Eiland, Danielle Laraque, Department of Pediatrics, College of Physician's & Surgeons, Columbia University at Harlem Hospital Center, New York, NY, and John Leventhal, Department of Pediatrics, Yale University, School of Medicine, New Haven, CT.



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*Purpose:* Although there exists an extensive body of literature examining abuse of pregnant woman, in regard to abused pregnant adolescents the literature is limited. The purpose of this study, therefore, was to assess the prevalence of abuse in pregnant adolescents and to identify factors associated with this abuse.

*Methods:* From October 1993 to June 1995, 148 pregnant adolescents were recruited from a school for parenting and pregnant adolescents and from an adolescent prenatal clinic in New York City. The participants were privately interviewed during regularly scheduled prenatal visits, using a 115-item fixed choice questionnaire. Adolescents who reported being in a physical fight, being hit and/or having a sexual encounter against their will during pregnancy were classified as abused.

*Results:* The reported prevalence of abuse was 26%. Of the adolescents who were involved in a physical fight, 32% reported a female peer as the perpetrator and 24% reported the father of the baby as the perpetrator. Three adolescents reported sexual abuse during pregnancy and in all three cases the father of the baby was the named assailant. When compared to their non-abused counterparts, abused adolescents reported greater teen-parent conflict/depression ( $p=.03$ ), greater cigarette use during pregnancy ( $p=.005$ ), greater alcohol use during pregnancy ( $p<.005$ ), greater lifetime use of marijuana ( $p<.001$ ); were more often afraid in their buildings ( $p=.019$ ); were less likely to discuss their pregnancy ( $p=.032$ ); and had more STDs during pregnancy ( $p=.016$ ).

*Conclusions:* Prevalence of abuse during adolescent pregnancy rivals if not surpasses those rates reported in pregnant adults. Substance use, lack of social support



support and involvement in risk behaviors were factors more commonly reported by abused adolescents. The relationship of these factors to abuse is not known. Knowledge of these factors, however, is imperative in developing clinical strategies to support and prevent adverse outcomes of adolescent pregnancy.



## **Acknowledgments**

I would like to thank Dr. Danielle Laraque, College of Physicians & Surgeons, Columbia University at Harlem Hospital Center. She took me under her wing, shared her love of community and Pediatrics and provided invaluable insights and guidance in the research process. She, as did the entire staff of Harlem Hospital, welcomed me as one of their own and withheld none of their many resources.

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## Introduction

Assault during pregnancy poses a risk to unborn children and their mothers. Each year, in the United States, approximately 3.9 million females give birth (1). Depending on ethnicity, adolescents account for 12.8% to 22.6% of these births (2). The literature regarding assault during pregnancy estimates that 1.2% to 20% of females are assaulted during pregnancy (3-10). Unfortunately, the adolescent population appears to be at greater risk of assault during pregnancy. Estimates are that between 6.7% and 21.7% of pregnant adolescents are assaulted (5,10).

Hypertensive disorders of pregnancy are the most common medical conditions affecting pregnant women, occurring in 5-10% of pregnancies (11). As part of routine prenatal care, physicians screen for hypertensive disorders at every prenatal visit. Hypertension during pregnancy is treatable and has a favorable prognosis. Although there is a higher prevalence of assault during pregnancy, physicians do not routinely screen for assault during pregnancy. Preterm labor, abruptio placentae and low birth weight are significantly associated with physical assault during pregnancy (12-15). In fact, over the past 60 years, the leading cause of maternal death has changed from obstetrical complications to trauma (16); and the leading cause of traumatic death is currently homicide (17). It is clear that the effects of assault during pregnancy can be devastating. It also is clear that physicians and other healthcare workers need to assume a role in helping to prevent assault against pregnant patients.

A primary step in the prevention of the assault of pregnant women is the identification of women at risk of assault. Research indicates that adult females assaulted during pregnancy are more likely to experience depression, lack a support network, report



more health conditions, use illicit drugs and alcohol, smoke, receive inadequate/late prenatal care and report a history of assault within the year prior to conception (18,19). Although pregnant adolescents have been reported to be at greater risk of assault than their adult counterparts, research regarding assault of pregnant adolescents is extremely limited.

### **Statement of Purpose**

In consideration of the limited literature examining abuse of pregnant adolescents, the goals of our research were to identify and describe adolescents who were assaulted during pregnancy. We believe that adolescents are at least at the same risk of abuse as their adult counterparts and that there are risk and protective factors associated with their abuse. Our efforts will hopefully bring clinicians closer to establishing primary care protocols that will ensure both the identification of pregnant adolescents at risk of assault and the appropriate interventions.

### **Background**

#### *Prevalence of physical abuse among pregnant adults:*

In 1975, Gelles published the first literature concerning the prevalence of physical abuse among pregnant women (20). He conducted informal interviews of families obtained through social work agencies and police log records in order to assess the prevalence of abuse. Since that time, more structured interviews and instruments have been developed to help assess the prevalence of abuse in pregnant populations. Our search of the literature produced more than 15 articles that reported rates of physical



abuse around the time of pregnancy between one and twenty percent. For the purpose of this review, comments will be limited to those studies that specified abuses occurring during pregnancy. Two studies were conducted so that women were interviewed postpartum, and 11 studies were conducted so that women were interviewed while they were pregnant.

Gelles (21) and Campbell (4) each used the former design. They reported rates of abuse of 15.6% and 8.2%, respectively. The disparity between these rates of abuse may be accounted for by methodological differences: Gelles used the Conflicts Tactics Scale (21), conducted telephone interviews, included male respondents and interviewed respondents regarding abuse that could have occurred years prior to his survey. Campbell used abuse assessment questions from the “March of Dimes protocol of care”(22), conducted interviews face to face, questioned females exclusively, and interviewed participants 2-5 days postpartum. Overall, the results of both studies may be affected by recall bias, sample selection, unwillingness of participants to disclose abuse, and the investigator’s inability to confirm independently reported incidences of abuse.

Studies that interviewed women during pregnancy, reported rates of abuse ranging from 0.2% to 19%. Three basic methodologies were used:

1. participants were given a questionnaire to complete and return to a sealed box,
2. participants were interviewed during a prenatal visit,
3. participants were interviewed during their first prenatal visit and reassessed during subsequent visits.

Smikle (23) and Stewart (24) used the first methodology and reported rates of physical abuse during pregnancy of 1.2% and 6.6%, respectively. It should be noted that Smikle



distributed the questionnaires in the presence of partners who attended the prenatal visit. This may have affected participants responses. Hilliard (25), Berenson (18) and Helton (6) used the second methodology and reported rates of physical abuse of 3.9%, 5.6% and 8%, respectively. The three used essentially the same assessment instrument. Participants in Hilliard's study, however, were at a earlier gestational age than participants of the other two studies. This may account for the disparity between Hilliard's results with those of Berenson and Helton. Finally, Amaro (8), Parker (12), McFarlane (26) and Gielen (9) used the third methodology and reported rates of abuse of 7%, 14.25, 17% and 19% respectively. With the exception of Amaro's, all studies used the Conflicts Tactics Scale (22) and/or the Abuse Assessment Screen (27). The use of a different assessment instrument may account for the lower rate of abuse reported by Amaro.

*Prevalence of physical abuse among pregnant adolescents:*

Our search of the literature resulted in two research articles that specifically focused on physical abuse among pregnant adolescents. Participants in both studies were interviewed during prenatal visits at public hospitals. The rates of abuse reported in these studies varied significantly. Berenson (5) and Parker (10) respectively reported that 6.7% and 21.7% of pregnant adolescents were physically abused during pregnancy. Demographically, the former study had a significantly larger percentage of white non-Hispanics (Table 1).

In a previous study of adults, Berenson reported that white non-Hispanics had higher rates of abuse than Hispanics and blacks (18). This difference in ethnic





composition between Berenson and Parker, therefore, does not seem to account for the higher rate of abuse reported by Parker. Most likely, differences in study methodologies account for the disparity of the results. Berenson defined physical abuse as being “hit, slapped, kicked or otherwise physically hurt.” Participants were screened during their first prenatal visit using these criteria. Parker, on the other hand, used 4 questionnaires in screening for abuse: the Abuse Assessment Screen (27), Conflicts Tactics Scale (22), Index of Spousal Abuse (28), and the Danger Assessment Screen (29). Furthermore, Parker assessed participants during their first prenatal visit and again during the second and third trimester. The repeated assessment in later visits captured an additional 14 (7%) physically abused teens. Other literature dealing with abuse in an adult population has demonstrated similar increases in reported abuse rates with repeated assessments (19).

Our study hopefully will build on the works of previous authors by not only reporting prevalence of abuse of pregnant adolescents, but identifying factors associated with abuse. In particular, we will attempt to identify both risk and protective factors associated with abuse. This awareness of prevalence and associated risks may improve the chances of preventive intervention.

### *Correlates of physical abuse during pregnancy*

In comparing victims of abuse to nonvictims, the literature indicates that women abused during pregnancy are more likely to experience depression, lack a support network, report more health conditions, use illicit drugs and alcohol, smoke, receive



inadequate/late prenatal care and have been the victims of abuse within the year prior to conception (18, 19).

#### *Pregnancy outcome following physical abuse*

Seven studies examined birth outcome following physical abuse. This literature reported that preterm labor (<37 weeks gestation) (13), abruptio placentae (30), and low birth weight (<2500 grams) (12) as significantly associated with physical abuse during pregnancy. For example, Parker (12) in a study of 1058 women found the relative risk of low birth weight to be 1.5, CI (1.1-2.2),  $p < .05$  (Table 2).

#### *Maternal mortality as a result of intentional injury*

Over the past 60 years, the leading cause of maternal death has changed from obstetrical complications to trauma. In addition, the leading cause of traumatic death is currently reported as homicide. A survey of maternal deaths at Cook County Hospital in Chicago from 1952 – 1965 attributed 53% of deaths to obstetrical complications of pregnancy (31). A survey of maternal deaths at Cook County Medical Examiner's Office between 1986 – 1989 attributed 46.3% of deaths to trauma (32). As trauma has become the leading cause of maternal death, homicide accounts for the majority of deaths attributed to trauma. Dannenberg reported that 63% of traumatic maternal deaths that occurred in New York City between 1987 – 1991 were attributable to homicide (33). Although it does not appear that pregnant women are at greater risk of homicide as compared to their non-pregnant counterparts, measures are needed to abate the rising proportion of maternal deaths due to violence. Fildes reports that the majority of injuries



sustained occurred in the home or near the homes of the victims and that most of the injuries were caused by the biological father or by other close male associates (32). Hence, efforts to assess and reduce domestic violence among pregnant women are a good step in reducing trauma as the leading cause of maternal mortality.

## **Methods**

### *Sample*

Pregnant adolescents were recruited from a school for parenting and pregnant adolescents and an adolescent prenatal clinic in New York City. All English-speaking adolescents were eligible to participate. Of the 228 adolescents approached, 158 enrolled in the study; 70 (31%) refused to participate. Participants were verbally instructed as to the purpose of the current study and were given written consent forms, which further outlined their roles in the study. Participation was completely voluntary and the participants were guaranteed the confidentiality of their responses. The Institutional Review Board of Columbia University approved the research protocol. The final sample size was 148 as 10 participants did not complete the interview.

### *Procedure*

From October of 1993 to June 1995, each participant was privately interviewed once during a regularly scheduled prenatal appointments. Most interviews were conducted early in the third trimester. The interviews were conducted by a trained research assistant, who was known to participants in the study through previous work at the prenatal clinic.



The questionnaire used in the interview consisted of questions adapted from the following sources: the 1993 CDC Youth Risk Behavior Survey, the John Hopkins Medical Institution one-year health survey (33), the Search Institute (34), a children's health locus of control survey (35), a teen-parent conflict and depression survey (37), and a parenting attitude scale (34). Questions were written on a sixth grade level. A total of 115 fixed-choice questions were asked. The questions were divided into twelve basic categories: demographics, current situation, sexual and contraceptive behaviors, living situation, sexually transmitted diseases, HIV and AIDS, health habits, risk factors, medical care, family issues, violence, and delivery and post delivery plans. The interview on average lasted 30 minutes. Participants who over the course of the interview revealed being victims of physical or sexual abuse were referred to and followed up by their primary care physician and/or counselors on staff.

*Definition of Variables:*

The sample was divided into two groups: abused and non-abused pregnant adolescents. Abused adolescents were defined as those hit or involved in a physical fight during pregnancy and/or those having a sexual encounter against their will during pregnancy. These individuals were those who answered questions 1a, 1b, 2b or 3a of Table 3 affirmatively.

The abused and non-abused individuals were compared along several variables: demographics, social well-being/adjustment, drug/alcohol usage, violence, prenatal course, contraception practices, and sexual history.





### *Demographics:*

Demographic data are outlined in Table 8. Questions regarding demographics were adapted from a Johns Hopkins Medical Institution one-year health survey (35).

### *Social Well-being/Adjustment:*

Social well-being/adjustment was examined using questions from the Search Institute(36), a screening tool for teen-parent conflict/depression (37), a 16-item children's health locus of control (38), and Rosenberg's self-esteem scale (39). These questions are outlined in Table 4.

### *Cigarette, Alcohol and Drug Usage:*

Adolescents were considered to have a positive history of cigarettes, alcohol, and/or drug usage if they answered any of the asterisked questions outlined in Table 5 affirmatively. Lifetime use of cigarettes, alcohol and drugs were determined by whether or not the adolescents reported ever having used each of the substances. All questions regarding substance use were adapted from the 1993 CDC Youth Risk Behavior Survey.

### *Exposure to Violence:*

Adolescents were considered to have been exposed to violence if they had:

- 1) witnessed a beating, a shooting, a stabbing or violent death of anyone,
- 2) felt afraid in their home or building because of fights or other activities,
- 3) carried a weapon, such as a razor, knife, gun or club during the 30-day period prior to being interviewed, or



- 4) experienced a sexual encounter against their will at any time preceding their pregnancy.

It should be noted that these criteria are distinct from those criteria used to define abused and non-abused adolescents. Questions came from the 1993 CDC Youth Risk Behavior Survey.

*Prenatal course:*

The prenatal course was concerned with:

- 1) gestational age when adolescents became aware that they were pregnant ,
- 2) what the first decision the adolescent made upon finding out about the pregnancy (decided immediately to continue the pregnancy, talked to someone about what to do about the pregnancy, seriously considered terminating the pregnancy),
- 3) who the first person the adolescent told about the pregnancy,
- 4) whether the adolescent received prenatal care, and
- 5) the gestational age at entry into prenatal care.

*Contraception:*

Contraceptive practices examined the use of any type of birth control during their first sexual encounter and during their last sexual encounter, use of condoms before and during the current pregnancy, intendedness of current pregnancy, and reasons why the adolescents did or did not use contraception (see Table 6).



### *Sexual History:*

Sexual history examined age of first intercourse, number of previous pregnancies, number of miscarriages, number of abortions, number of children, and history of sexually transmitted diseases.

### *Analysis*

The adolescents were divided into two groups, abused and non-abused, and compared along several variables. Continuous variables were compared using student t-test, and bivariate variables were analyzed using chi-square. Statistical significance was established at  $p < 0.05$ .

### *Work performed by author*

The database that was the basis of this thesis was provided by Dr. Laraque. The statistical analysis of data was performed by the author. This included recoding original data to comply with the key variables defined in this study. Dr. Laraque wrote the SPSS formulas that were used to measure social well-being and adjustment variables. Dr. Leventhal and Dr. Laraque suggested approximately 25% of the variables that were examined and provided invaluable feedback in the presentation of data. The author wrote all the drafts of the thesis.

## **Results**

### *Demographics: (Table 8)*

Of the 148 pregnant adolescents who completed the study, 75(51%) were recruited from a school for pregnant and parenting adolescents, and 73(49%) were recruited from an adolescent prenatal clinic. The demographic characteristics of the non-abused and abused adolescents are shown in Table 8. There were no statistically



significant differences between the groups along these variables. The adolescents ranged in age from 13-20 years, with a mean age of 16 years. The twenty year old was included in this study as she defined herself as an adolescent and sought care at an adolescent prenatal clinic. Inclusion of this individual does not qualitatively change our results. The partners of the adolescents ranged in age from 15-31, with a mean age of 19 years. The majority of the participants classified themselves as black (69%). Approximately 85% of the adolescents were enrolled in school, and the mean grade level was the 9<sup>th</sup> grade. More than 90% of the adolescents were unemployed, and more than 80% used Medicaid as their primary insurance. Less than 1% of the adolescents were married, and nearly 12% reported no contact with the father of their baby. Most of the adolescents lived in a household headed by their mother.

*Assessment for abuse: (Table 7)*

According to our definition, 39(26%) adolescents reported being abused during pregnancy. Of the 38 adolescents who reported being involved in a physical fight during pregnancy, 32% reported that the altercation involved a girl they knew, and 24% reported the father of their baby was involved. The remainder of those reportedly involved were comprised of family members, strangers and other peers (Table 7b). One individual reported being threatened and hurt by a girl she knew. Three adolescents reported being sexually assaulted during pregnancy; the 3 girls reported the father of the baby as the perpetrator.





It should be noted that 64 (59%) of the 109 adolescents who were categorized as non-abused were under the age of 18 and impregnated by a man over the age of 18 years. This relationship qualifies as statutory rape in New York City.

*Correlates of abuse:*

*Social well-being/adjustment: (Table 9)*

The two groups did not differ significantly along measures of assets, health locus of control, or self-esteem. In comparison to non-abused adolescents, abused adolescents experienced greater teen-parent conflict/depression; measurements were 2.9 and 3.4 respectively ( $p=.03$ ).

*Cigarette, alcohol and drug use: (Table 10)*

Approximately 23% of adolescents reported a history of smoking cigarettes regularly. Abused adolescents were more likely to smoke during pregnancy; 26% compared to 8% of non-abused adolescents smoked during pregnancy ( $p=.005$ ). There were no other significant differences between the groups in regard to cigarette use.

There was not a significant difference between the two groups in terms of lifetime alcohol use. The mean age at which adolescents had their first alcoholic drinks was 14 years. Adolescents who reported being abused during pregnancy were more likely to have used alcohol during pregnancy than those who did not report abuse. Eight (21%) of the abused teens reported alcohol use as compared to 4(4%) of the non-abused ( $p<.005$ ). Of the adolescents who drank during pregnancy, there was not a significant



difference between the two groups in terms of the number of days that the teens drank during a 30-day period or the number of drinks consumed.

Thirty-eight percent of non-abused compared with 74% of abused adolescents reported smoking marijuana in their lifetime ( $p<.001$ ). The mean age of initiation for both groups was 14 years. There was no significant difference between the groups in terms of use of marijuana during pregnancy (Table 10).

Both groups denied having ever used cocaine or other illicit drugs.

#### *Lifetime exposure to violence: (Table 11)*

The majority of the adolescents in both groups had been exposed to violence. The majority of this exposure was through witnessed violent acts. Abused adolescents more often reported being afraid in their building than non-abused adolescents (26% versus 10%,  $p=.019$ ). There were no other significant differences between the groups in terms of exposure to violence.

#### *Prenatal course: (Table 12)*

All of the adolescents received prenatal care. There was no significant difference in gestational age at which adolescents found out that they were pregnant, entered prenatal care or entered our study. Most adolescents decided to continue the pregnancy when they found out that they were pregnant, and only a minority seriously considered abortion. When they found out about their pregnancies, 19% of abused adolescents talked to someone regarding their pregnancy compared with 35% of their non-abused counterparts ( $p=.032$ ). The father of the baby was the first person informed of the pregnancy in 44% of the adolescents.



*Sexual History: (Table 13)*

For over 60% of the adolescents, their current pregnancy was their only pregnancy. Less than 13% had ever had a miscarriage or abortion. Thirty-three percent of abused adolescents reported having had a sexually transmitted disease (STD), while 22% of non-abused adolescents reported previous STDs ( $p=.325$ ). There was a significant difference between the two groups for STDs during pregnancy: 23% of abused adolescents versus 8% of non-abused adolescents ( $p=.016$ ). Sexual assault prior to pregnancy was reported by 18% of abused adolescents and 11% of non-abused adolescents ( $p=.275$ ). The mean age at time of assault was 7 years and 9 years, respectively ( $p=.061$ ).

*Contraception: (Table 14)*

Nearly half of the adolescents in each of the groups reported not using birth control during their last sexual encounter. This compares to nearly 75% reporting birth control use during their first sexual encounter. The majority of the adolescents in both groups reported that they were not thinking about getting pregnant during the sexual encounter that resulted in their current pregnancies. Overall, there were no significant differences between the two groups in terms of contraceptive practices (Table 13).



## Discussion

The reported frequency of abuse in our study of pregnant adolescents was 26.4%. Of those abused, 7.6% reported that the occurrence of abuse also involved involuntary sexual activity. Interestingly, 64 (59%) of the 109 adolescents who were categorized in the non-abused were under the age of 18 and impregnated by a man over the age of 18 years. This relationship could qualify as statutory rape in NYC.

The reported rates of abuse for our sample compare to rates of 6.7% and 21.7% reported by Berenson (5) and Parker (10), respectively. Differences in instruments used to assess the occurrence of abuse, populations studied and ways of selecting the samples may account for the differences among the studies.

The perpetrator of abuse in our sample was most often a girl known to the adolescent, whereas Berenson and Parker reported a male partner as the most common perpetrator. In an adult population, males are also reported as the most common perpetrators. It should be noted that, 17% and 22% of the adolescents in Berenson's and Parker's studies were married. This rate of marital status more closely parallels those rates reported in adult populations assessed for abuse. None of the abused adolescents in our study was married. This difference in marital status may account for some of the differences in the perpetrators of abuse.

Aside from reporting the prevalence of abuse, another goal of our study was to examine factors associated with abuse. We found that significantly more of the abused adolescents smoked cigarettes, drank alcohol and used marijuana during pregnancy. Similarly, significantly more abused adolescents had used marijuana during their lifetime. These findings are consistent with studies examining substance use in abused pregnant





adults (18). Substance use may 1) be part of an effort to deal with the psychological impact of abuse, 2) indicate a greater propensity of abused individuals to participate in risky behaviors, and/or 3) increase the vulnerability of an adolescent to abuse. Whatever the case, it would be worthwhile for the clinician caring for pregnant adolescents to be aware of the substance use patterns of their patients. This awareness might offer the opportunity to bring about abstinence, which might reduce risk to the adolescent and the unborn child.

We also found that abused adolescents were more likely to have STDs during pregnancy. This finding parallels the work of previous authors who reported higher rates of sexually transmitted disease in adolescents with a history of childhood sexual abuse (40).

In terms of social well-being/ adjustment, we found that abused adolescents demonstrated higher teen-parent conflict/depression and were less likely to discuss their pregnancy with others when they initially found out that they were pregnant. Higher teen-parent conflict/depression may be indicative of a less supportive and/or dysfunctional family. This type of home environment may put pregnant adolescents at risk of abuse. Higher teen-parent conflict/depression may also be accounted for by greater experience of depression. It would be hard to discern whether the depression resulted in a greater risk of abuse or whether the depression was a result of the abuse.

The lower rates of discussion of the pregnancy among abused adolescents may also be indicative of a lack of social support. These findings support a hypothesis that lack of social support places pregnant adolescents at greater risk of abuse.



Finally, in terms of exposure to violence, we found that abused pregnant adolescents more often reported being afraid in their buildings. Our study did not assess the impact of this fear or the characteristics of the building that elicited this fear. Clinicians can only advocate for supportive communities and elimination of community violence to foster the well-being of pregnant adolescents.

### *Limitations of study*

The results of our study may not be applicable to other pregnant populations based on several factors. First, our study was conducted at a large inner city hospital and was limited to English speaking adolescents. Whether the experiences of pregnant adolescents residing in other regions or who are non-English speaking is similar is unknown. Second, 51% of our participants were recruited from a school for parenting and pregnant adolescents; the experiences of these adolescents may not reflect those of other pregnant adolescents. Third, all of the participants in this study received prenatal care. The experience of pregnant adolescents who do not receive prenatal care may differ markedly. Fourth, recall bias may have affected our results as participants described incidents that had previously occurred. In addition, we did not verify the information reported by the adolescents. The social stigma associated with abuse, cigarette, alcohol and drug use, sexually transmitted diseases may have influenced the responses of participants. Despite the aforementioned limitations, we are confident that our study provides clinicians with an awareness that can be used to favorably impact pregnant adolescents.



## Conclusions

Pregnant adolescents experience abuse in proportions equal to if not greater than their adult counterparts. This abuse is most often reported to involve physical rather than sexual violence and the most commonly reported perpetrator was a female peer. It is worth noting however, that the majority of pregnant adolescents in our study were minors impregnated by men over eighteen years of age. While only 2.0% of adolescents reported being the victims of sexual abuse, the case could be made that 57% of the pregnant adolescents were victims of sexual abuse according to New York State law. It should be noted that participants in this study were forthcoming in reporting abuse as defined in our study; none refused to answer questions pertaining to abuse. Similarly, participants gave the ages of their babies' fathers willingly. It, therefore, seems in the power of the clinician to identify a significant number of patients abused during pregnancy by asking directed questions in a private supportive environment.

Substance use, lack of social support, and involvement in risk behaviors were more often reported by adolescents abused during pregnancy. Our study does not establish that these factors are causal; however, it is worth the clinician taking a history that assesses for these factors. If these factors are causal, abuse would be prevented. If these factors do not cause abuse, they independently have the potential to impact negatively on the course of the pregnancy and its outcome.

Overall, our study highlights the importance of history taking and forming a relationship with patients that is not merely focused on physical findings and laboratory data. In the course of a clinical interview, a clinician can identify pregnant adolescents who are abused and adolescents who may be at risk of abuse or other negative



experiences during pregnancy. With this knowledge, the clinician can begin to offer pregnant adolescents the support needed to prevent adverse outcomes.





Table 1. Comparison of sample demographics in two studies of pregnant adolescents (5,10).

	Berenson N=342	Parker N=214
Blacks	34%	38%
Hispanic	21%	34%
White non-Hispanic	45%	27%
Single	83%	78%
Mean Age	16.0	17.5
Recruited at Urban Prenatal Public Clinic	Yes	Yes

Table 2. Birth Weights (grams) for Infants of Abused Versus Nonabused Teen and Adult Women By Ethnicity (12).

	African-American	Hispanic	White
<u>Teens</u>			
Non-abused	3111 $\pm$ 524.02	3321 $\pm$ 478.85	3375 $\pm$ 573.32
Abused	2945 $\pm$ 553.52	3436 $\pm$ 476.75	3300 $\pm$ 491.96
<u>Adults</u>			
Non-abused	2943 $\pm$ 760.81	3433 $\pm$ 541.40	3383 $\pm$ 603.27
Abused	2831 $\pm$ 739.59	3294 $\pm$ 712.20	3216 $\pm$ 713.06



Table 3. Assessment for physical and sexual abuse during pregnancy

<p>Question 1</p> <p>a. During this pregnancy, how many times have you been in physical fight or been hit by someone?</p> <p>b. Were you injured?</p> <p>c. Did a doctor or nurse treat your injury?</p> <p>d. Were you hospitalized as a result of your injuries?</p> <p>e. What was the relationship to you of the person(s) involved?</p>
<p>Question 2</p> <p>a. During this pregnancy has anyone ever physically threatened you?</p> <p>b. Were you injured?</p> <p>c. Where on your body were you injured?</p> <p>d. Did a doctor or nurse treat your injury?</p> <p>e. Were you hospitalized as a result of your injuries?</p> <p>f. What was the relationship to you of the persons involved?</p>
<p>Question 3</p> <p>a. During this pregnancy, have you ever had a sexual encounter against your will?</p> <p>b. How old were you when this happened?</p> <p>c. What was the relationship to you of the person(s) involved?</p> <p>d. Did you become pregnant as a result of this type of encounter?</p> <p>e. Is your current pregnancy a result of such an encounter?</p>



Table 4. Assessment of social well-being/adjustment

<p><u>Search Institute Assets:</u> Below is a list of activities. Which ones have you participated in in the past year?</p> <ol style="list-style-type: none"> <li>Girls' club</li> <li>Scouting</li> <li>"Y" or other youth group</li> <li>4-H</li> <li>religious youth groups</li> <li>summer program</li> <li>school team sports</li> <li>volunteering</li> <li>In the past year, how often have you attended services or other activities at a church or other religious place?</li> </ol>
<p><u>Teen-parent conflict/depression:</u> Are you able to talk to your family easily? Are you currently having conflicts with your family? Do you often feel hatred for your family? Do you feel tired much of the time? Do you feel sad or depressed much of the time? Have you seriously considered killing yourself recently?</p>
<p><u>Health Locus of Control:</u> I can do many things to keep from getting sick. When I am sick I can do things to get better. I can do many things to fight illness. I can make many choices about my health. I can do many things to keep accidents from happening. I can only do what the doctor tells me. My mother must tell me how to keep from getting sick. Only a dentist can take care of my teeth. Only a doctor or nurse keeps me from getting sick. My father must tell me how to keep from getting sick. Other people must tell me what to do when I feel sick. Other people must tell me how to stay healthy. Good health comes from being lucky. Bad luck makes people get sick. People who never get sick are just plain lucky. If I get sick, it is because getting sick just happens. If I get hurt, it is because accidents just happen.</p>
<p><u>Self-esteem:</u> I am able to do things as well as other people I feel that I have a number of good qualities. I feel that I do not have much to be proud of at times. I take a positive attitude toward myself. I wish I could have more respect for myself. At times I think that I am no good at all. I certainly feel useless at times. I feel that I'm a person of worth, at least on an equal plane with others. All in all I feel that I am a failure. On the whole, I am satisfied with myself.</p>



Table 5. Assessment of Drug/Alcohol Usage

<p>1. Cigarettes:</p> <p>a. Have you ever tried cigarette smoking, even one or two puffs?</p> <p>b. How old were you when you smoked a whole cigarette for the first time?</p> <p>c. Have you ever smoked cigarettes regularly, that is, at least one cigarette every day for 30 days?*</p> <p>d. How old were you when you first started smoking cigarettes regularly (at least one cigarette every day for 30 days?)</p> <p>e. During this pregnancy, have you smoked even one whole cigarette?*</p> <p>f. During the past 30 days, on how many days did you smoke cigarettes?*</p> <p>g. On the days that you smoked, how many cigarettes did you smoke per day?*</p>
<p>Alcohol:</p> <p>2. How old were you when you had your first drink of alcohol other than a few sips?*</p> <p>3. During this pregnancy, on how many days have you had at least one drink of alcohol?*</p> <p>4. When you drank, how many drinks did you have at one time?</p>
<p>Marijuana:</p> <p>5. How old were you when you tried marijuana for the first time?*</p> <p>6. Since you became pregnant, how many times have you smoked marijuana?*</p>
<p>Cocaine:</p> <p>7. How old were you when you tried any form of cocaine, including powder, crack, or freebase, for the first time?*</p> <p>8. Since you became pregnant, how many times have you used any form of cocaine, including, powder, crack, or freebase?*</p>
<p>Illegal drugs:</p> <p>9. During your life, how many times have you injected (shot up) any illegal drug?*</p> <p>10. Since you became pregnant, how many times have you injected (shot up) any illegal drugs?*</p> <p>11. Since you became pregnant, how many times have you injected (shot up) any illegal drugs?*</p> <p>12. During your life, how many times have you used any other type of illegal drug, such as LSD, PCP, ecstasy, mushrooms, speed, ice, heroin or pills without a doctor's prescription?*</p> <p>13. Since you became pregnant, how many times have you used any other type of illegal drug, such as LSD, PCP, ecstasy, mushrooms, speed, ice, heroin or pills without a doctor's prescription?*</p>
<p>Father of baby drug use:</p> <p>14. Has the baby's father ever tried:</p> <p>a. Marijuana</p> <p>b. any form of cocaine, including powder, crack or freebase</p> <p>c. injecting drugs</p> <p>d. any other type of illegal drug</p>





Table 6. Reasons for using and not using protection

If you don't use protection every time when you have sex, why don't you use it?	
a)	Because it is too much of a hassle
b)	Because it is uncomfortable
c)	Because my boyfriend doesn't want me to
d)	Because my boyfriend uses protection
e)	Because I didn't think we'd get pregnant
f)	Because I don't know enough about protection/birth control
g)	Because I didn't think there was any reason to
h)	Because it is too expensive to buy
i)	Other
If you have ever used protection when you've had sex, why do you use it?	
a)	Because its easy to use
b)	Because its comfortable
c)	Because my boyfriend likes to use it
d)	To stop from getting pregnant
e)	To stop from getting a venereal disease
f)	To stop from getting HIV/AIDS
g)	Other

Table 7. Adolescents abused during pregnancy.

	<i># of incidences</i>	<i># of cases</i>
<b>Non-abused</b>		109(73.6%)
<b>Abused</b>		
<b>Physical fight/hit</b>	38	38(25.7%)
<b>Injured in fight</b>	9	
<b>Threatened + hurt</b>	2*	1(0.7%)
<b>Sexual encounter Against will</b>	3♣	
<b>Total</b>	47	148

\*One of the two did not report being in a physical fight or being hit during pregnancy.

♣All reported being in a physical fight or being hit during pregnancy, and none reported injury.

Table 7b. Persons reported to be involved in physical fight with pregnant adolescents.

<i>Perpetrator of physical fight:</i>	<i>N=38</i>
<b>Girl known to adolescent</b>	12(32%)
<b>Father of baby</b>	9(24%)
<b>Immediate family member</b>	7(18%)
<b>Other relative</b>	3(8%)
<b>Stranger</b>	3(8%)
<b>Boy known to adolescent</b>	1(3%)



Table 8a. Demographics of pregnant adolescents.

	<i>Non-abuse</i> <i>N=109</i>	<i>Abused</i> <i>N=39</i>	<i>P=</i>
<b>Age: Range</b>	13-20 yrs	13-18 yrs	
<b>Mean+S.D.</b>	16.32 +1.33	16.13 +1.49	.478
<b>Race: Black</b>	69%	69%	.463
<b>Hispanic</b>	17%	26%	
<b>White</b>	4%	0%	
<b>Other</b>	17%	5%	
<b>Education: Range</b>	6 <sup>th</sup> -12 <sup>th</sup> grade	6 <sup>th</sup> -12 <sup>th</sup> grade	
<b>Mean+S.D.</b>	9.0 +1.22	8.8 +1.21	.322
<b>Repeated Grade</b>	66%	71%	.343
<b>In School Now</b>	86%	85%	.803
<b>Unemployed:</b>	89%	97%	.170
<b>Family Structure:</b>			
<b>Parents Together</b>	6.4%	10.2%	.106
<b>Siblings</b>	64%	64%	.990
<b>Relationship with FOB*:</b>			.863
<b>Married</b>	1%	0%	
<b>Living Together</b>	15%	15%	
<b>Dating</b>	59%	59%	
<b>Friends</b>	9%	13%	
<b>No Contact</b>	12%	13%	
<b>Living Situation:</b>			
<b>With mother</b>	67%	64%	.745
<b>With Father</b>	13%	8%	.387
<b>With FOB</b>	16%	13%	.676
<b>Housing : Apartment Bldg</b>	53%	51%	.153
<b>Housing Project</b>	34%	49%	
<b>Private House</b>	9%	0%	
<b>Shelter</b>	3%	0%	
<b>Medical Insurance:</b>			.709
<b>Medicaid</b>	83%	82%	
<b>Private</b>	14%	18%	
<b>None</b>	1%	0%	

\*FOB: Father of baby





Table 8b. Demographics of fathers of babies.

		<i>Non-abused</i> N=109	<i>Abused</i> N=39	<i>P=</i>
<b>Age:</b>	<b>Range</b>	15-31 yrs	15-28 yrs	
	<b>Mean</b>	19.78 +3.43	19.54 +3.00	.680
<b>Education:</b>	<b>Range</b>	8 <sup>th</sup> -College	8 <sup>th</sup> -College	
	<b>Mean</b>	11.06 +1.66	10.94 +1.20	.340
	<b>Repeated Grade</b>	20%	8%	.446
	<b>In School Now</b>	47%	38%	.475
<b>Unemployed:</b>		42%	56%	.249

Table 9. Social well-being/adjustment

	<i>Non-abused</i> (N=109)	<i>Abused</i> (N=39)	<i>P=</i>
<b>Search Institute Assets:</b>			
<b>Girls' club</b>	7(6%)	3(8%)	.824
<b>Scouting</b>	3(3%)	1(3%)	.926
<b>Youth group</b>	19(17%)	11(28%)	.164
<b>4-H</b>	0	0	-----
<b>Religious youth group</b>	9(8%)	2(5%)	.486
<b>Summer program</b>	29(27%)	6(15%)	.112
<b>School team sports</b>	24(22%)	11(10%)	.479
<b>Non-school sports</b>	7(6%)	3(8%)	.857
<b>Volunteering</b>	15(14%)	7(18%)	.824
<b>Teen-parent conflict/depression</b>	2.9	3.4	.033*
<b>Health locus of control</b>	12.26	12.75	.618
<b>Self-esteem</b>	5.5	5.4	.579

\*p&lt;.05



Table 10. Cigarette, Alcohol and Drug Use.

	<i>Non-abused N=109</i>	<i>Abused N=39</i>	<i>P=</i>
<b>Cigarettes</b>			
<b>Age of initiation</b>	15.3 years	14.2 years	.100
<b># Who smoked regularly</b>	23(21%)	13(33%)	.214
<b># Who smoked during pregnancy</b>	9(8%)	10 (26%)	.005*
<b>#Days smoked over past 30 days</b>	6.7	4.3	.603
<b>#Cigarettes smoked per day</b>	1.8	1.2	.357
<b>Alcohol</b>			
<b>Age of initiation</b>	14.6 years	14.0 years	.095
<b># Who used during lifetime</b>	58	28	.132
<b>#Who drank during pregnancy</b>	4(4%)	8(21%)	.005*
<b># Days drank over past 30 days</b>	1.25	1.44	.653
<b>#Drinks at each occasion</b>	1.25	3.12	.120
<b>Marijuana</b>			
<b>Age of initiation</b>	14.2	14.2	.993
<b>#Who used during lifetime</b>	38(38%)	29(74%)	.001*
<b>#Who used during pregnancy</b>	12(11%)	9(23%)	.060
<b># Times smoked during pregnancy</b>	1.4	4.1	.263
<b>Cocaine</b>			
<b>Age of initiation</b>	0	0	-----
<b>Use during pregnancy</b>	0	0	-----
<b>Illicit Drugs</b>			
<b>Lifetime Use</b>	0	0	-----
<b>Use during pregnancy</b>	0	0	-----

\*p&lt;.05

Table 11. Lifetime Exposure to Violence

	<i>Non-abused (N=109)</i>	<i>Abused (N=39)</i>	<i>P=</i>
<b>Witnessed:</b>			
<b>Beating</b>	80(73%)	28(72%)	.115
<b>Shooting</b>	31(28%)	9(23%)	.934
<b>Stabbing</b>	21(19%)	5(13%)	.617
<b>Violent death</b>	21(19%)	8(21%)	.510
<b>Fear:</b>			
<b>Home</b>	7(6%)	3(8%)	.584
<b>Building</b>	12(11%)	9(23%)	.019*
<b>Number of days carried</b>			
<b>Knife, gun, club</b>	1(1%)	1(3%)	.214
<b>Razor/weapon</b>	1(1%)	3(8%)	.080
<b>Involuntary sexual encounter preceding pregnancy</b>	12(11%)	7(18%)	.127

\*p&lt;.05





Table 12. Prenatal course

	<i>Non-abused (N=109)</i>	<i>Abused (N=39)</i>	<i>P=</i>
<b>Gestational age when knew pregnant</b>	8.5 weeks	6.8 weeks	.106
<b>Gestational age at 1<sup>st</sup> prenatal visit</b>	13.5 weeks	13.6 weeks	.972
<b>Gestational age at entry to study</b>	26.9 weeks	26.1 weeks	.605
<b>Received prenatal care</b>	100%	100%	
<b>Decision</b>			
Continue pregnancy	56(51%)	17(44%)	.376
Discussed with someone	38(35%)	22(19%)	.019*
Considered abortion	26(24%)	10(9%)	.815
<b>First person told:</b>			
<b>FOB</b>	48(44%)	17(44%)	.253
<b>Mother</b>	30(28%)	5(13%)	
<b>Father</b>	2(2%)	0	
<b>Sister</b>	5(5%)	5(13%)	
<b>Brother</b>	1(1%)	0	
<b>Friend</b>	11(10%)	3(8%)	
<b>Other</b>	13(12%)	7(18%)	

\*p&lt;.05



Table 13. Sexual History

	<i>Non-abused (n=109)</i>	<i>Abused (n=39)</i>	<i>P=</i>
<b>Age at 1<sup>st</sup> intercourse</b>	14.2 $\pm$ 1.54 yrs	13.8 $\pm$ 1.28 yrs	.160
<b># Pregnancies</b>			.777
<b>one</b>	71(65%)	25(64%)	
<b>two</b>	27(25%)	9(23%)	
<b>Three+</b>	11(10%)	5(13%)	
<b>#Miscarriages</b>			.678
<b>zero</b>	100(92%)	34(87%)	
<b>one</b>	8(7%)	5(13%)	
<b>two</b>	0	0	
<b>three</b>	1(1%)	0	
<b>#Abortions</b>			.534
<b>zero</b>	83(76%)	29(74%)	
<b>one</b>	8(7%)	5(13%)	
<b>two</b>	5(5%)	4(10%)	
<b>#Children</b>			.977
<b>zero</b>	99(91%)	35(90%)	
<b>one</b>	8(7%)	3(8%)	
<b>two</b>	2(2%)	1(3%)	
<b>Sexual assault prior to current pregnancy</b>	12(11%)	7(18%)	.275
<b>Age at sexual assault</b>	9.3 $\pm$ 4.36 yrs	13.2 $\pm$ 3.90 yrs	.064
<b>STD:</b>			
<b>#Who had STD</b>	24(22%)	13(33%)	.325
<b>Gonorrhea</b>	4(4%)	3(8%)	.343
<b>Chlamydia</b>	17(16%)	7(18%)	.209
<b>Venereal warts</b>	3(3%)	1(3%)	.347
<b>Syphilis</b>	2(2%)	0	.200
<b>Herpes</b>	1(1%)	1(3%)	.347
<b>HIV</b>	0	0	-----
<b>Hepatitis</b>	1(1%)	0	.282
<b>PID</b>	2(2%)	0	.200
<b>Other</b>	2(2%)	2(1%)	.303
<b>Vaginal infections</b>			
<b>Trichomonas</b>	6(6%)	4(10%)	.513
<b>Yeast</b>	39(36%)	11(28%)	.541
<b>Vaginitis</b>	2(2%)	1(3%)	.722
<b>STD during pregnancy</b>	9(8%)	9(23%)	.016*

\*p&lt;.05



Table 14. Contraception

	<i>Non-abused (n=109)</i>	<i>Abused (n=39)</i>	<i>P=</i>
<b>Birth control used at 1<sup>st</sup> sexual encounter</b>			
None	28(26%)	11(28%)	.690
Condom	71(65%)	26(67%)	
Pill	3(3%)	2(5%)	
Withdrawal	1(1%)	0	
Rhythm	1(1%)	0	
Condom & pill	5(5%)	0	
<b>Birth control used at last sexual encounter</b>			.908
None	51(47%)	20(51%)	
Condom	18(17%)	7(18%)	
Pill	1(1%)	0	
IUD	1(1%)	0	
<b>Current pregnancy</b>			.369
Trying to get pregnant	8(7%)	3(8%)	
Trying not to get pregnant	25(23%)	7(18%)	
Not thinking about getting pregnant	75(69%)	28(72%)	
Raped		1(3%)	





Table 15. Comparison of Adolescent Populations.

	Current Study N=148	Berenson N=342	Parker N=214
Assessment for Abuse: Physical:	Physical fight/hit during pregnancy	Hit, slapped, kicked or otherwise physically hurt	Abuse Assessment Screen, Conflicts Tactics Scale, Index of Spousal Abuse, Danger Assessment Scale
Sexual:	Sexual encounter against will during pregnancy	Sexual abuse or rape	Abuse Assessment Screen
#Of Assessments	One(random prenatal visit)	One(first prenatal visit)	Once each trimester
Sampling	51% from a school for young mothers 49% from prenatal clinic	100% from prenatal clinic	100% from prenatal clinic
Population			
City	New York	Texas	Maryland
Mean Age	16 years	16 years	17.6 years
Black	69%	34%	38%
Hispanic	20%	21%	34%
White	3%	45%	27%
Single	99%	83%	78%





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