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Biological Versus Social Factors of Juvenile Sex Offenders: A Meta-analysis

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By

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Abstract

Juvenile sex offending is not a new phenomenon but is one of limited research, with only a slight increase in research in the past decade. This meta-analysis used 5 articles to determine which holds a greater influence on juvenile sex offenders, biological or social factors. Biological factors were divided into impulsiveness, psychosis/mental health diagnosis (excluding paraphilic disorders), and sexual deviance/paraphilia. Social factors were divided into antisocial behavior, prior criminal activity, prior exposure to sexual activities/pornography, and history of being sexually abused. This meta-analysis found that biological factors have a slightly greater effect on Juvenile sex offenders, but it was not significant.

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INTRODUCTION

The topic of juvenile sexual offending is one of limited research, yet juveniles are responsible for almost half the reported sexual offenses committed annually (Ryan & Otonichar, 2016). This thesis aims to determine whether biological or social factors have a greater effect on juvenile sexual offenders. Current research has yet to agree on an underlying cause that gives juvenile sex offenders the impulse to offend, which has made it difficult for the justice system to decide whether to convict or treat these offenders.

The definition of a juvenile is any person who is under the age of 18. Even though in the United States there is a consensus on the definition of a juvenile, some crimes committed by juveniles can be tried in adult court. The crime and the age at which a juvenile can be tried as an adult varies from state to state. For example, in the state of Florida, a juvenile can be tried as an adult at 14 years old, but in the state of Maine, there is no minimum age, meaning a person of any age can be tried as an adult (Interstate Commission for Juveniles, 2022). The age at which a juvenile can be tried as an adult is important to note because if the juvenile was unaware of the consequences of their actions.

A juvenile sex offender (JSO) is someone who is under the age of 18 that commits a sex crime, rape, molestation, etc. A JSO's crime can be violent or nonviolent. JSOs can be broken into 4 categories JSOs with paraphilic disorders, JSOs with anti-personality traits, JSOs with neurological compromise, and JSOs with impaired social skills (Ryan & Otonichar, 2016). Research has shown that the profiles of violent and nonviolent sexual offenders are different and

should not be put into one homogenous group when studied. In this thesis, both violent and nonviolent JSO will be reviewed.

Multiple predictive assessments have been produced to assess a child's risk of becoming a JSO. These predictive assessments are The Juvenile Sex Offender Assessment Protocol-II, The Estimate of Risk of Adolescent Sexual Offense Recidivism, and the PCL: YV. All predictive assessments stated have been tested for reliability and validity and scored low in each category. These assessments were found to be better for predicting recidivism than first occurrences (Ryan & Otonichar, 2016). This could be due to the inconclusiveness of research as to why JSOs offend.

Literature Review

While research on JSOs is limited, most of the research found pertains to whether JSOs should be in their own category or be grouped with other non-violent or violent juveniles who commit nonsexual crimes. There is also debate on whether juvenile child molesters and juveniles who rape peers should be differentiated when JSOs studies are conducted. Van Wijk et al. (2005) conducted a study of " [juvenile] child molesters, rapists, and violent and property offenders on a number of demographic characteristics, personality traits, and problematic behavior characteristics" (p. 26). This study's participants were found using outpatient files from the Netherlands Institute of Forensic Assessment. To determine psychological traits the Adolescent Temperament List and the Amsterdam Biographical Questionnaire were used. The Raven Progressive Matrices Test was used for measuring intelligence. To determine behavioral problems van Wijek et al. (2005) used the clinical notes available and then ranked the juvenile

offender's behavioral problems from severely deficient to sufficient. When comparing non-sex juvenile offenders to JSOs, van Wijek et al. (2005) concluded that there is a difference between non-sex juvenile offenders and JSOs regarding personality traits, demographics, and problem behavior. They therefore should not be put into a homogeneous group. One limitation of this research was the generalization that had to be done due to the use of patient files. Also, not all participants were subjected to psychological evaluation and therefore that created a bias for only those with more problematic behavior being evaluated.

Other research has taken the information about JSOs being in a heterogeneous group to emphasize the importance of developing a profile for both male and female JSOs. Fox and DeLisi (2018) agree with McCusish and Lussier (2017) that research needs to be focused more on the behaviors and treatment programs than the causes and recidivism and causes of JSOs. The goal of Fox and DeLisi's (2018) research was to develop a profile for JSOs. Juveniles referred to the Florida Department of Juvenile Justice due to felony or misdemeanor sexual crimes. The sample consisted of 3,857 males and 286 females. Using the latent class analysis Fox and Delisi (2018) found 4 categories of male JSOs and two categories of female JSOs. "The four male JSO profiles were labeled the Non-Disordered Males, Impulsive Unempathetic, Early Onset Chronic, and Male Victim offender. The two female JSO groups were labeled the Non-Disordered Females and Female Victim Offenders (Fox and DeLisi, 2018, p. 309). The non-disordered males and females have not been sexually abused, are not impulsive, and do not suffer from psychosis. The characteristics of this group conflict with other research that states the majority of JSOs have been sexually abused. The only group that was sexually abused was the male victim and the female victim offender. This category was the only category to experience psychosis as

well, another characteristic other research deemed to be a predictive factor. Most male offenders experience empathy, the only category to lack empathy is the impulsive empathic male offender.

This research reemphasizes that there is not one specific set of characteristics and events that cause one to become a JSO. A limitation of this study is that the data was derived from the Florida Department of Juvenile Justice, which is not specifically meant for research.

Another question asked of juvenile sexual offenders is whether they are any different than adult sexual offenders. In an article written by Ryan & Otonichar (2016), it is stated that JSOs have a closer relation to other juvenile delinquents than to adult sexual offenders. In a meta-analysis conducted by Seto and Lalumière, it was found that JSO and general delinquent juveniles exhibited no difference in anti-social behaviors, drug abuse, psychopathy, maltreatment, family problems, and exposure to violence. (cited Ryan & Otonichar, 2016). The differences between JSO and deviant juveniles were sexual abuse history and physical and emotional abuse. In comparison, Adult sexual offenders have higher rates of psychopathy and paraphilias than JSOs (cited Ryan & Otonichar, 2016). It is unlikely for JSOs to have any paraphilic disorders, whereas paraphilic disorders are commonly found in adult sexual offenders. Despite JSOs rarely exhibiting paraphilic disorders Carter (2004), concluded that JSOs tend to have more sexual fantasies and are more violent than adult sex offenders. This is possibly caused due to developmental differences.

Various research concludes that there is no specific cause for juveniles to sexually offend, but most research proposes that prior sexual exposure and exposure to violence correlate with JSOs. What makes it so hard to determine risk factors or “warning signs” for offending or

recidivism is that the risk factors that apply to adult sex offenders do not apply equally to juvenile sex offenders. For example, conducting a penile plethysmography is effective for assessing an adult sex offender on the potential of recidivism, but because most juvenile sex offenders do not have or develop sexual paraphilia this test is inappropriate to use on this demographic (Ryan and Otonichar, 2016). Because there is no specific set of dynamic and static factors that lead to a juvenile committing a sex crime. It is possible to have a JSO who is antisocial, not well adjusted to society, and has no criminal past but also have a JSO who is not antisocial, well adjusted to society, and has a criminal past. Ryan (2016) proposed a model stating that juveniles who have a negative self-image may retreat into fantasy to avoid negative social interactions. Other characteristics such as "personality traits, psychopathologies, criminal behaviors, demographic features, and childhood histories" can be predictors for JSOs (Fox and DeLisi, 2018, p. 299).

The difference in the appearance of paraphilic disorders between adult and juvenile sex offenders creates differences in the effectiveness of treatment and recidivism prevention programs. Treatment for adult sex offenders often focuses on paraphilic disorders and the reshaping of their sexual thoughts toward children using cognitive behavioral therapy (CBT) (Holmes & Holmes, 2017). When using CBT for a JSO the focus of the treatment is to assist the JSO in understanding what are appropriate and inappropriate thoughts (Kim et al., 2016). In a meta-analysis conducted by Kim et al. (2016), it was found that medical interventions such as castration and hormone therapy were more effective than psychological treatments in preventing recidivism in both adult and juvenile sex offenders. It was also concluded that all interventions have a greater success rate with juveniles than adult offenders. Kim et al. (2016) concluded that

the differences in success rates are due to the differences between adult and juvenile sex offenders. It is recommended that treatment for juvenile sex offenders should be individualized due to a difference in dynamic risk factors in each case (Ryan and Otonichar, 2016).

McCusish and Lussier (2017) called for research to focus more on the behavior and psychological process of JSOs instead of the person's characteristics. In order to focus more on the behavioral and psychological aspects of JSOs McCusish and Lussier (2017) applied the Developmental Life Course (DCL) to JSOs. The application of DCL allows researchers to examine the before and after of a sexual offense, not just the act itself (McCusish and Lussier, 2017). In this research, the DCL approach is compared and contrasted to clinical, typological, and characteristic research approaches pertaining to JSOs. McCusish and Lussier (2017) conclude via the use of the DCL perspective that the juvenile sexual offender is opportunistic, not caused by certain demographics and antisocial behaviors as other research approaches have concluded. It is also explained that JSOs have a lower sexual recidivism rate due to fewer opportunities as one progresses through developmental stages. A limitation of using the DCL approach is it is not always possible to know what happened before or after the sexual offense was committed. It is also impossible to follow every JSO to see their future, which is another aspect of the DCL approach. More research is needed using the DCL and JSOs.

To examine the idea of how well-adjustment sex offenders are to society, Hanum et al. (2021), analyzed the results of sex offenders' Rorschach test results. The participants in this study were male sex offenders who were high school educated with an age range of 17-70 years. The ink blot cards were divided into content categories in accordance with Klopfer and Davidson's

(1962) recommendations (cited Hunum et al., 2021). The animal category was the most frequently responded to in this study. According to Hunum et al. (2021), this means that the majority of the subjects are not well adjusted and when the quality of their response was taken into consideration, it also showed a lack of intellectual capacity. It was also found that sex offenders have a hard time regulating emotions and empathizing which correlates with a lack of impulse control. One limitation of this study is that adjustment issues may be caused by the lack of creativity which would then affect all responses to the Rorschach test.

When looking at the social factors of JSOs, it is important to note the attitudes of the general age demographic in accordance with consensual sexual relations in the late teen years. Tegegne (2022) did a correlational study surveying first-year students at Woldia University to determine a correlation between self-esteem, peer pressure, demographics, and attitudes toward premarital sex. The results of this correlational study found that low self-esteem had a high correlation with premarital sex. Peer pressure and premarital sex also had a positive correlation. There was no correlation between participation in premarital sex and a person's attitude towards premarital sex. It was found that students who still lived with their parents or guardians had a less favorable view towards premarital sex than those living alone. This finding aligns with the research of McCusish and Lussier (2017) that sexual relations are opportunistic. They also align with Ryan's (2016) model of sex offending saying that negative self-image can cause offenders to retreat into sexual fantasy.

METHOD

The overall question to be answered in this thesis is “Do biological or social factors have a greater influence on juvenile sexual offending behavior?" In order to investigate this hypothesis, a meta-analysis will be conducted. For this study, each article used must meet the following criteria:

1. Research must focus on the biological factors and/or social factors that affect juvenile sex offenders.
2. Research must have been published between 2013-2023.
3. Participants must be juvenile sex offenders between the ages of 10 and 18.
4. Data must be presented in a way so effect size can be determined.

The research will not be limited by country of publication.

Ahn and Kang (2018), state that in a meta-analysis it is important to determine the effect size to ensure the accuracy of data. In this thesis, effect size r will be evaluated for each research article used. A total effect size will be conducted as well. A random effects model will be the type of meta-analysis used in this thesis. A sub-group analysis will be performed to determine if a singular factor had more of an effect on the outcome than another. The articles used in this meta-analysis and their outcomes can be found in Table 1.

Search terms to be used are “juvenile sex offender”, “adolescent sex offender”, “characteristics”, “biological factors”, “social factors”, and “longitudinal study”. Primo Search via University of Central Florida (UCF) libraries will be used along with Google Scholar.

Analysis

The biological factors that will be analyzed are impulsiveness, psychosis/mental health diagnosis (excluding paraphilic disorders), and sexual deviance/paraphilia. Social factors to be analyzed are antisocial behavior, prior criminal activity, prior exposure to sexual activities/pornography, and history of being sexually abused. Each effect size for each variable will be converted to Pearson's *r* using an Exel spreadsheet created by Jamie DeCoster (2012). A continuous variable meta-analysis for each variable will be conducted using SPSS.

Once the meta-analysis of each variable is calculated the effect sizes of each variable will be grouped into their respective categories of biological and social. After grouping the variables, the mean of the biological effect sizes will be calculated along with the mean of the social effect sizes. The means will then be compared using a two-variable T-test to determine if there is a significant difference between biological and social factors.

RESULTS

Table 1 shows the effect sizes of a number of different biological and social variables on juvenile sex offenders in comparison to nonsexual juvenile offenders that were used in this meta-analysis. Table 2 shows the effect sizes and the significance of each variable via meta-analysis before grouping. Of the biological factors, impulsiveness has the greatest effect size. Of the social factors, antisocial behaviors have the smallest effect size. Table 3 shows the mean effect size after each of the variables were grouped into their respective category of biological or social factors.

Using a mean comparison, the results of this study showed biological factors have a slightly greater effect size than social factors. Biological factors of juvenile sex offenders and nonsexual juvenile offenders have a greater mean effect size than social factors on these two populations, but the difference is not significant ($t(5)=-1.392$, $p<.05$). Table 4 shows the results of the two-sample t-test ran to determine the significance between the means found in Table 3.

DISCUSSION

Juvenile sex offending is one of limited research that has increased over the past decade. Over the years many factors have been looked at to determine the cause of juvenile sex offending. The most common variables looked at are antisocial behavior, impulsiveness, psychosis/mental health diagnosis, sexual deviance/paraphilia, prior criminal activity, prior exposure to sexual activities/pornography, and a history of being sexually abused. The goal of this study was to break these categories into biological and social factors and determine which variable group has the greatest effect on juvenile sex offenders. After a mean comparison of effect sizes, it was found that biological factors have a greater mean effect size on juvenile sex offenders, with impulsiveness having the greatest effect size.

Despite numerous sources stating the most common influential factors of JSOs, the studies found while conducting this research did not test every influential variable listed by colleagues. They seemed to use various combinations of the seven variables.

This research on the genesis of juvenile sex offenders may help to inform those conducting treatment research. Due to this research finding no significance between biological and social factors, rehabilitation or punishment of a JSO should be determined on a case-to-case basis. JSOs should be evaluated and treated for their biological differences and social evaluations should be done as well to determine the best consequence. For example, it was found that impulsiveness has the greatest influence on JSOs, and therefore therapy to teach the offender to not act on the impulsives or medical treatment be mandated by the courts not time behind bars. Another concern of the criminal justice system is whether to try juveniles as adults for sex crimes. If the juveniles commit the crimes due to biological factors, it would not be prudent for

them to be tried as adults. These offenders, if purely influenced by biological factors, may not know the extent of the damage caused by their actions and think it is normal to act on their biological impulses. This is not to say that every JSO does not know that their actions were wrong, but due to the average age of the offenders being 15 years old, it may be harder for them to differentiate between impulsives that they may think are normal and what is right.

Limitations of Research

The number of articles used in this study is limited with a population of five. Not all articles used tested every variable researched. It should also be noted that there is not a significant difference between biological and social factors, but biological factors did have a slightly higher mean effect size. This study agrees with previous research that JSO can be influenced by both social and biological factors. Further research is needed to determine the causes and treatment of juvenile sex offending.

APPENDIX A TABLES

Table 1. *Studies Included in Meta-Analysis*

Article	N	*r**	Gender	Age Mean	Outcome
Fanniff & Kolko (2012)	176		Male	15.7	Found that subgroups of JSO are more similar than expected based on social and biological variables
Criminal History					
Previous Sexual Exposure		Not Examined			
Sexual Abuse					
Antisocial Behavior		0.057			
Psychosis/Mental Health Diagnosis		0.6			
Impulsiveness		0.132			
Sexual Deviance		0.776			
Driemeyer et al. (2013)	32		Male	15	Antisocial behaviors were less in JSOs than VNOs. JSOs showed more sexual deviance than VNOs
Criminal History		0.282			
Previous Sexual Exposure		0			
Sexual Abuse					
Antisocial Behavior		0.2829			
Psychosis/Mental Health Diagnosis		0.04			
Impulsiveness		0.71			
Sexual Deviance					
McCuish et al. (2014)	51		Male	15.6	JSOs have differnt behavior patterns than JNSO. Risk factors found were offense history, abuse history, and family history.

Criminal History		0.21			
Previous Sexual Exposure		Not Examined			
Sexual Abuse		0.14			
Antisocial Behavior		0.1			
Psychosis/Mental Health Diagnosis		0.09			
Impulsiveness		Not examined			
Sexual Deviance		0.12			
Rosa et al. (2018)	4,153		Male and Female	Not given	Severity of risk factors differ between JSOs and NJSOs
Criminal History		not examined			
Previous Sexual Exposure		not examined			
Sexual Abuse		0.0432			
Antisocial Behavior		0.0804			
Psychosis/Mental Health Diagnosis		0.1			
Impulsiveness		0.0636			
Sexual Deviance		Not Examined			
Krause et al. (2020)	230		Male and Female	14.46	Found that JSOs with preoccupied and dysregulated preoccupations with sexuality had higher rates of psychiatric disorders
Criminal History		0.223			
Previous Sexual Exposure		Not Examined			
Sexual Abuse		0.103			

Antisocial Behavior	0.124
Psychosis/Mental Health Diagnosis	0.263
Impulsiveness	0.83
Sexual Deviance	0.079

*r stands for effect size of variable in relation to JSOs and NSJOs

Table 2. *Meta-Analysis Results***

	k	*r**	CI_{LL}	CI_{UL}	*z*	*p*
Social Factors						
Criminal History	4	.373	.101	.644	2.69	.007
Previous Sexual Exposure	1	.123	-.232	.478	.680	.497
Sexual Abuse	5	.247	-.076	.570	1.497	.134
Antisocial Behavior	5	.068	5.790	.045	.091	<.001
Biological Factors						
Psychosis/Mental Health Diagnosis	5	.237	2.224	.028	.446	.026
Impulsiveness	4	.964	.595	1.333	5.121	<.001
Sexual Deviance	4	.292	-.056	.641	1.644	.100

*r stands for effect size of variable in relation to JSOs and NSJOs in relation to each article
**Used to determine significance of each individual variable

Table 3. *Mean Comparison of Grouped Factors*

	N	Mean*	SD	Std. Error Mean
Social Factors	4	.203	.136	.068
Biological Factors	3	.498	.405	.233

Table 4. *Two Sample T-test***

	N	Mean	SD	t-cal	t-crit	p*
Social Factors	4	.203	.136	-1.395	2.015	.222
Biological Factors	3	.498	.405			

*p value .05
**Test mean difference significance

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