



The Relationship Between Professed Sexuality in Adolescents and Outward Aggressive Behavior

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Abstract

Much research within the field of adolescent mental health has focused on both the comorbidity of adolescent depression and sexuality, and on adolescent depression and aggression, but there is a lack of information on the association between adolescent sexuality and aggression. This study analyzes data from the National Longitudinal Study of Adolescent Health to observe the relationship between sexuality, aggression, depression, and third variables. The results of the study demonstrate a significant relationship between sexuality and aggression. Non-heterosexual youth have higher mean aggression levels than heterosexual youth. There are no confounders found from the third variables that were tested for the relationship between sexuality and aggression. Drug use and parent factors are found to interact. This study shows preliminary findings that suggest a difference in aggression between heterosexual and non-heterosexual adolescents. Therefore, more research should look into adolescent mental health and sexuality. In addition, non-heterosexual youth outreach programs should place more emphasis on effectively dealing with aggression.

Introduction

The mental health of adolescents is strongly influenced by social pressures, support systems, and the atmosphere of their community (Teasdale, 2005; Gilberg, 1978). Direct or indirect social pressures and commentary about normative behavior from peer groups can affect adolescent mental health, and can lead to problems associated with depression or aggression (Bontempo & D'Augelli, 2002). A predisposition for either of these characteristics may be exacerbated by a hostile social environment. This is especially true if an individual is different from the majority, or marked by a potential stigma – for example, ethnicity, physical impairments, or non-heterosexual orientation.

Although many youth go through phases of depression or acting out 'risk behaviors', young homosexuals are often at higher risk for these characteristics than heterosexuals, as they experience more troubling maturation and self-questioning (Remafedi, 1987; Bonime, 1966; Lampinen, 2008). Previous research supports the hypothesis that non-heterosexual adolescents

experience higher rates of depression, suicide, and risk taking behaviors than heterosexual youth. (Garofalo, Wolf, Kessel, Palfrey, & DuRant, 1998; Saewyc, Bearinger, Heinz, Blum, & Resnick, 1998; Soht, 2001; Remafedi, French, Story, Resnick, & Blum, 1998). Some estimate that homosexual adolescents are two to three times more likely to attempt suicide than heterosexual youth (Jessor, 1992), and one study found that homosexual boys are three to four times more likely to attempt suicide than boys from the general population. (Saewyc et al., 1998). According to another study, 33% of non-heterosexual participants report at least one intentional self-destructive act, and almost 50% have repeated suicide attempts (Krahe, Scheinberger-Olwig, & Schütze 2001). Some research also suggests there is a gender difference in mental health among non-heterosexual adolescents, with males being more likely to complete suicide attempts (Remafedi et al., 1998).

Related research into adolescent growth focuses on risk factors. Dr. Richard Jessor defines a risk factor as any behavior that can compromise...psychosocial aspects of successful adolescent development (Jessor, 1992). Some of these actions include substance abuse, withdrawal from social engagement, unprotected sex, and other dangerous behaviors. Most of these factors are actions that potentially harm the health of the individual performing the actions and are a form of internalizing problems or frustrations (Jessor, 1992). Engaging in protected sex, early onset of sex, substance abuse, and other related activities as risk factors have been well researched. For example, homosexual youth are three times more likely than the general population to engage in sex before thirteen years of age (Saewyc et al., 1998), and they have twice the mean number of risk behaviors than the general population (Jessor, 1992).

However, most of these studies focus on internalized risk factors, not outward, externalized manifestations of mental health as related to sexuality. Although there has been research into the relationship between sexuality, depression, and behaviors that risk an individual's health, and there is substantial research into adolescent aggression, there has been little research into the correlation between sexuality and aggression. This is surprising, as aggression and depression have been found to overlap in population studies. Several studies report an increased likelihood of experiencing anger and reduced impulse control in those adolescents that attempted suicide (Lehnert & Overholser, 1994). A recent meta-analysis demonstrates a range of comorbidity between aggression and depression in adolescents from 9% to 35% (Chicchetti & Toth, 1991). Some studies suggest that the relationship between the two is due to the response of individuals to environmental problems, and that the difference is because of a tendency to either internalize or externalize problems (Weiss & Catron, 1994). Unfortunately, few of these studies look at gender; however, one study that does so found that mean scores on the Center for Epidemiological Studies Depression Scale were no different between men and women (Gjerde, Block, & Block, 1988). Nonetheless, the same study reports that external factors – the participants' evaluation by a researcher – differed among men and women, and that these factors are associated with higher aggression, with men appearing more antagonistic. (Gjerde et al., 1998).

Therefore, if youth who demonstrate depressive symptoms have a higher risk for aggressive tendencies, and if non-heterosexual (NH) youth are at higher risk for emotional disorders of depression and risk factors, then NH youth are likely to be at risk for aggression. This assumption, however, has not yet been investigated, as there is no data pertaining to how sexuality influences externalized aggression. The only research that explores sexuality in adolescents and how they externalize their problems are those that deal with risk factors, which did not include aggressive behaviors.

NH youth are more susceptible to negative commentary from their peer groups, but not very much is known about how this potentially hostile environment affects their mental health development. This study looked at aggression levels in NH adolescents compared to heterosexuals, to see if there is a significant difference in their externalized aggressive behavior. The goal of this study is to fill the gap in the research by studying the relationship between sexual orientation and external aggressive behavior.

Methods

Sample

The sample for this study came from the National Longitudinal Study of Adolescent Health, a nationally representative study that asked United States adolescents in grades seven through twelve questions about health, education, peer networks, family life, substance use, sexual history, criminal activities, and decision-making skills to examine how social contexts influence adolescent health and risk behaviors. Data were collected through in-home interviews that were recorded on a computer and questionnaires for parents, school administrators, and partners. Sensitive questions were pre-recorded, and respondents answered directly on the computer. The sample consists of 12,105 youth.

Definitions

Sexual orientation is not binary, and also not fully determined during adolescence. Gender identity, sexual preference, and phenotype all play a role in an individual's sexual orientation. Due to the format and construction of the survey – only two questions addressed romantic attractions – the classifications of sexual orientation in this research was not as broad as the true range of sexuality. The sexual orientation variable was created by crossing professed romantic attraction with gender. Any individual that indicated possible attraction to the same sex was assigned to the non-heterosexual category. Therefore, the dichotomous variable used for sexual orientation was only a general approximation for professed sexual orientation. Variables such as gender identity, transsexuality, asexuality, etc., were not able to be included due to limitations of the NESARC data. In addition, this survey did not take into account any change in sexual orientation that occurred later in life.

Measures

There were multiple dependent measures for this study. Variables that indicated aggression (for example, getting into fights, bringing a weapon to school, graffitiing public property, and acting rowdy in public) were summed to create a continuous variable so that general aggression could be compared among subjects. The questions that were combined to create the sum of depression were the same questions as the Modified 9-Item Center for Epidemiologic Studies Depression Scale. The 9-Item Scale is a self-reporting survey, designed to measure basic depressive symptomatology in the general population. It is often used for population surveys, as it has high internal consistency, and suitable test-retest repeatability (Radloff, 1977). Although this scale does not offer a clinical diagnosis of depression, it was satisfactory for the purposes of this research, which examined relative and general levels of depression. Because of the large distribution and low frequency of certain values, amounts above ten were combined as one group for both the aggression and depression variable. A drug use variable was created, where being classified as a drug user meant using any drug more than once. A protective factors variable was also created by summing variables that indicated adult or social protection (e.g. parents often at home, feeling close to adults, liking the social atmosphere of community) in the participants' communities; a higher protective factor indicated more adult protection and care. This was then stratified at the third percent levels.

Results

385 participants were classified as NH, and 6,045 identified as heterosexual. Less than 5% of participants had aggression scores over ten, and 50% had aggression scores of zero or one.

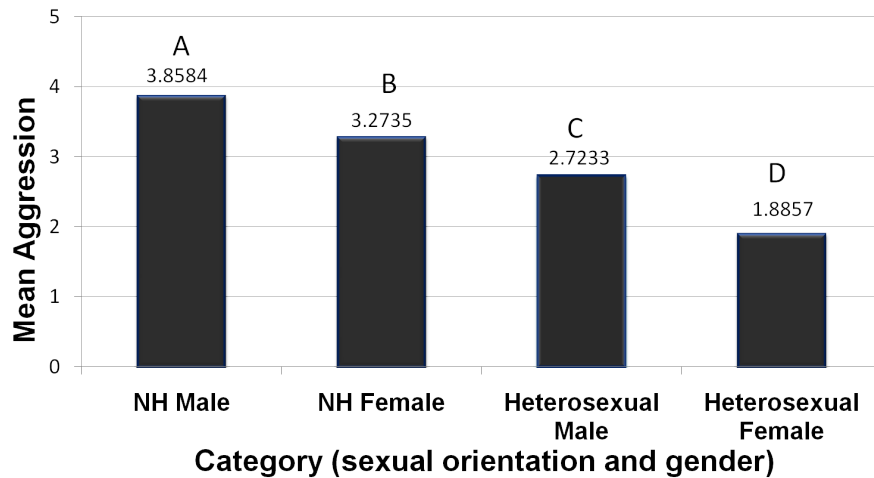


Figure 1. Mean aggression of adolescent NH males/females and heterosexual males/females. Each letter (A, B, C, D) signifies statistical significance between categories.

NH youth (NH $M = 3.38$ $SD = 3.4$) were on average more aggressive than heterosexual youth (H $M = 2.5$ $SD = 2.9$ $p < .001$). When examining the association between professed sexual orientation and aggression by gender, NH males were the most aggressive, followed by NH females, then heterosexual males, with heterosexual females the least aggressive, $p < .009$.

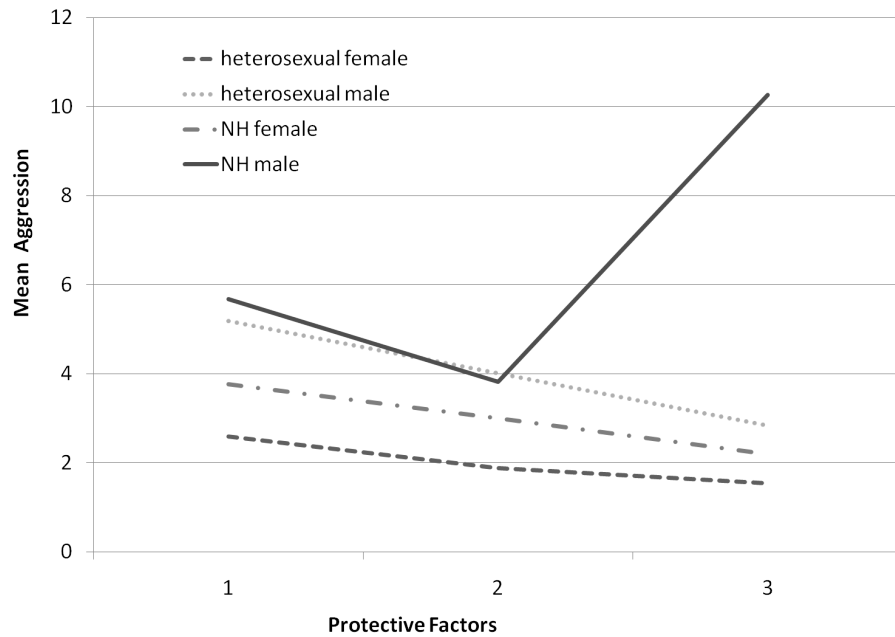


Figure 2. Mean aggression of adolescent NH males/females and heterosexual males/females by an interaction of protective factors, segmented into three levels.

A multiple regression analysis was run to compare the association between mean aggression and sexuality by protective factors (survey questions for protective factors: how much do you feel that adults/parents/teachers care about you; how much do you feel your family understands you; how much do you want to leave home). All of the sexuality categories, except NH male, show a decrease in aggression as protective factors increase. The protective factors variable was found to significantly interact with aggression, $p < .001$. The reason for this interaction is probably largely due to the anomaly of NH males. For this category, aggression increases by 10.26 as the protective factor level changes to 3. All other sexual categories experience only decreases in aggression as protective factors increase.

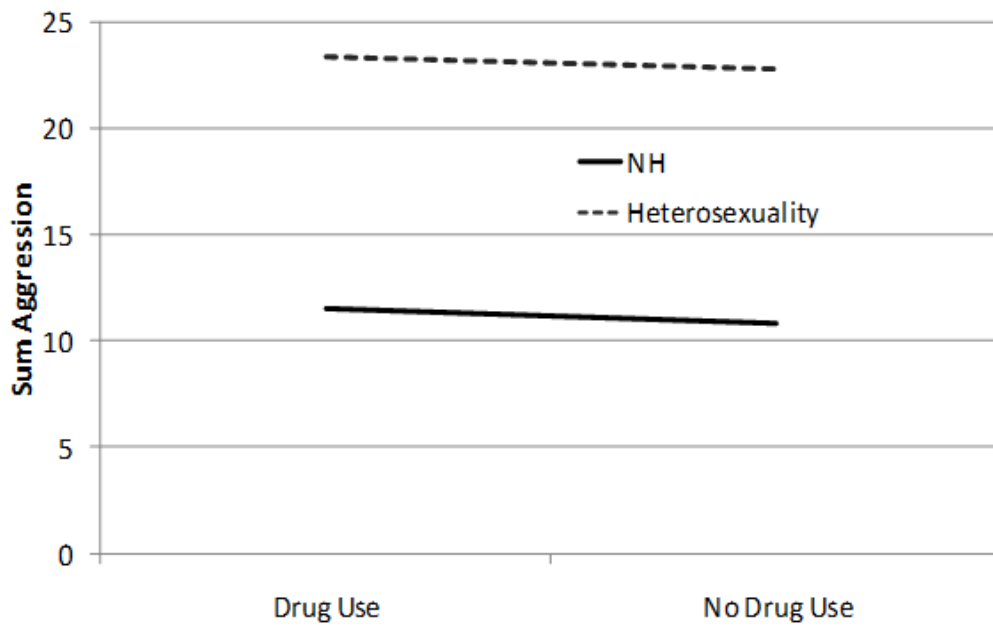


Figure 3. Mean aggression of adolescent NHs and heterosexuals by drug use levels

A multiple regression analysis was run to compare the association between mean aggression and sexuality by drug use levels, where drug use was defined as using drugs more than once. There was a significant interaction ($p < .001$). Mean aggression decreased with no drug use for both NH and heterosexual youth, but mean aggression had a greater decrease for NH (heterosexual, 0.5; NH, 0.8).

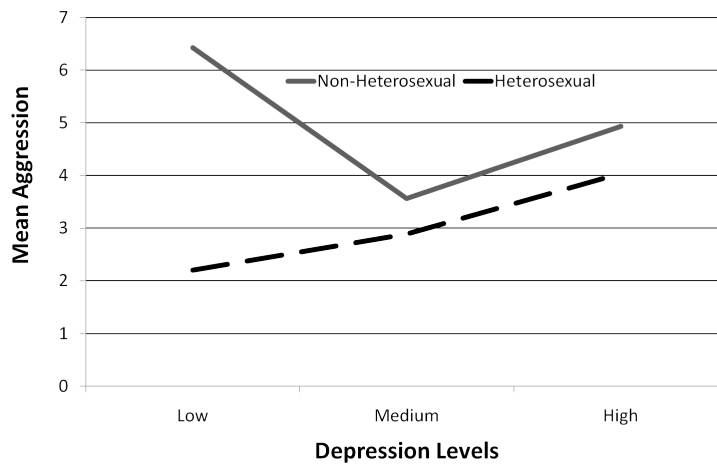


Figure 4. Mean aggression of adolescent NH males/females and heterosexual males/females by three levels of depression.

The interaction between mean aggression and mean depression approached significance ($p = .0735$, NH parameter = 0.12). Non-heterosexuals showed more varied average aggression as average depression increased, whereas heterosexuals showed a steady increase, no matter how depression was stratified.

Discussion

The results of this study support the hypothesis that adolescent NH youth express higher levels of outward aggression than heterosexual youth. Non-heterosexual youth have statistically significant higher aggression scores than heterosexual youth, where average NH aggression was 3.38 and average heterosexual aggression was 2.5. This could be due to a number of factors, but it is likely that social pressures and commentary on normative or socially acceptable behavior (i.e. non-heterosexuality is wrong) cause negative behavior responses. In addition, confusion during maturation about sexuality could contribute to negative emotion reactions and aggressive outbursts. Multiple regression analyses tested possible confounds and interactions. Tested third variables are: education courses on health, substance abuse, and stress management; positive decision making skills; negative decision making skills; social atmosphere, self efficacy, drinking, and tobacco use. The only variables in the survey that contribute to aggression are the interactors drug use and protective factors. No confounding variables exist from the tested variables.

The interaction by drug use changes the relationship between aggression and adolescent sexuality, so that the difference in aggression between drug use and no drug use for NHs was greater than that for heterosexuals. This data is consistent with previous research that demonstrates the greater vulnerability of NH to drug use, abuse, and addiction. The slopes for NH and heterosexuality are still very similar to each other, however, so the interaction doesn't change the relationship to a great degree. An intriguing anomaly was found, that for NH males with a protective factor of 3, aggression increases substantially. For all other observational

categories (NH female, heterosexual male and female), aggression decreased linearly with each additional protective factor. This could possibly be explained by these participants' social and domestic environment (e.g. an overprotective or suffocating home life, unaccepting parents, or rebelling against a close-knit family).

Another explanatory factor that could contribute to the association between sexuality and aggression, even if it didn't interact with or confound the data, is gender. Males have more mean aggression than females, even though NH females are more aggressive than heterosexual males. This relationship is similar to previously found data that demonstrates a gender and sexuality disparity for aggression, with NH females being more aggressive than heterosexual females, and males demonstrating more aggression overall.

NHs has higher mean depression, and depression doesn't interact with professed sexuality. However, when depression is grouped by frequency distribution into three categories, NH aggression first decreases then increases. This pattern of non-linear changes holds true regardless of how depression is segmented – at the thirds, quartiles, or into 10 levels, there are increases and decreases in aggression with each change in depression level. This finding may be due to random chance, because the change between depression levels is so small. Another possibility is that NHs may have greater disparity for mental health, depending on their social environment and support.

Although the data discovered are significant, - the mean aggression scores differ among individuals based on their sexuality - the practicality of this new information is somewhat limited, as the difference in mean aggression is small. However, even though this is the case, the implications of these findings are profound, as no previous study has looked at the relationship between sexuality and aggression directly, as the two main variables. The important result is that, above and beyond all other tested factors, NH youth have significantly higher aggression than heterosexual youth. It indicates there is a correlation between sexuality and aggression, and that there is more to the relationships between sexuality and aggression, and how social environment and family life affect NH emotional maturation.

There are some additional limitations in this study. There are lurking variables that may further explain this association. The binary category of heterosexual and NH is a limitation; it is not exhaustive of sexuality's full range, and an individual qualified as NH only if they professed having romantic feelings towards someone of the same sex. Sexuality is also not certain during adolescence – in fact, this confusion is potentially be one of the factors that influences increased aggression. Likewise, the aggression and depression variables do not indicate diagnoses, either, and are only estimates or general observations of aggressive or depressive tendencies.

The results motivate questions into how NH youth, their family and community life, and NH mental health interact. If it is true that NH youth are more aggressive, research should be conducted into why this is the case, to find the root of the association. Although it is theoretically possible that genotype plays a role in the significance of these results, there is no scientific evidence for this. It is hypothesized instead that the cause is a stigmatizing social environment, leading to the internalizing and then externalizing of homophobic comments and social norms. Even in a family with supportive and loving parents, a NH youth who is not open about their sexuality can feel oppressed if their family is homophobic, judgmental, unaccepting, or even if their family simply is unaware of their child's sexual orientation. There should be more research exploring the relationship between sexuality, aggression, and social conditions, particularly family life. This should be done by further exploring this data set with continued, more in-depth statistical analysis, and moving out of the lab and into the field for more naturalistic observation of NH youth and their social environments. A more specific survey,

directed towards NH youth, with new questions should be conducted. Even within the National Longitudinal Study of Adolescent Health, there are still more questions, and combinations of questions, that can be investigated further. In this study, generalized categories were created, but these can be broken up even further, or more specifically summed, to create different categories that may reveal more information. More research should also be done, through literature review and data analysis, into how NH adolescents respond to their communities, the issues they struggle with, and what appropriate assistance and outreach they require to deal with their problems. Supplementing this should be personal interviews and field research into high schools and homes, to gain first-hand understanding of the implications and consequences of society's impact on the development of adolescent homosexuals.

Isabel Rouse is a member of the class of 2014 at Wesleyan University. She is undecided about her major, but is considering Biology and Environmental Science, as well as and Informatics and Modeling. The data and inspiration for this research originated in Professor Lisa Dierker's Applied Data Analysis class in the fall of 2010. There, she discovered her love for statistical analysis, and conducted the research that would lay the foundation for this paper. Isabel would like to thank Professor Dierker for her invaluable guidance and tireless help in conducting this research, as well as the T.A.'s Sam Epstein and Abram Rowe for their assistance. She would also like to thank Katelin da Cruz for her edits, and the rest of the Mind Matters editing team for helping her to expand and improve her paper. Correspondence may be addressed to: ouse@wesleyan.edu

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