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The Relationship Of Substance Use, Biological Sex, And Age To Defender Behaviors In Middle And High School Students In Rural Schools

Amanda D'Ottavio

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THE RELATIONSHIP OF SUBSTANCE USE, BIOLOGICAL SEX, AND AGE TO
DEFENDER BEHAVIORS IN MIDDLE AND HIGH SCHOOL STUDENTS IN
RURAL SCHOOLS

by

Amanda D'Ottavio
Bachelor of Arts, University of Winnipeg, 2012

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

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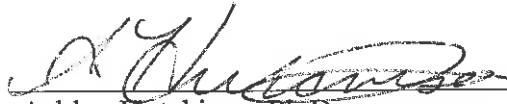
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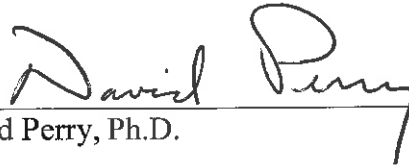
This thesis, submitted by Amanda D'Ottavio in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.



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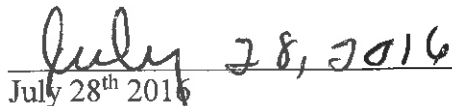


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This thesis is being submitted by the appointed advisory committee as having met all of the requirements of the School of Graduate Studies at the University of North Dakota and is hereby approved.



Wayne Swisher
Dean of the School of Graduate Studies


July 28th 2016

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July 28nd 2016

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ABSTRACT

While there are many studies looking at the characteristic of defenders in bullying situations, the literature regarding defender behaviors and substance use is lacking. In a sample of rural adolescents, the current study aims to examine the relationship between defender behaviors, substance use, biological sex and age. Rural middle and high school youth from six Northern Plains schools in the Midwest (N = 264) completed a self-report survey. Surveys were created to examine defender behaviors and substance use, and a demographic questionnaire collected biological sex and grade level. Grade level was used in place of age. A relationship between defender behaviors with biological sex and age was not found, but the relationship between defender behaviors and substance use was significant. Adolescents who reported higher levels of defender behaviors also reported lower levels of substance use, and vice versa. Limitations and future directions are discussed. Findings support the need for additional research into the relationship between defender behaviors and substance use.

CHAPTER I

INTRODUCTION

Bullying is a common issue faced by children and adolescents, often occurring at school and is a problem in all countries (Vanderbilt & Augustyn, 2010). Frisé and Holmqvist (2010) believe that during one's time in school, nearly everybody experiences bullying. According to Craig, Pepler, and Atlas (2000), student reports and observations find that on average, bullying occurs two times per hour on playgrounds and/or classrooms and depending on the study, affects 9%-54% of youth (Vanderbilt & Augustyn, 2010).

Salmivalli, Lagerspetz, Björkqvist, Österman and Kaukianinen (1996) found that bullying often takes place in group situations where other individuals are present, and even those not present are often aware of what is happening. According to Björkqvist, Ekman, & Lagerspetz (1982), bullying often gets support from group members; even those attempting to simply mind their own business. These individuals are most often called *bystanders*. A *defender* is a bystander who comes to the aid of a victim by intervening in some way to stop the bullying (Salmivalli et al., 1996).

Research has shown that peer support in the form of defender behavior can decrease bullying, and the problems associated with it (Salmivalli, 1999). Along with actual peer support, previous research indicates that perceived support is positively correlated with one's perceived competency, feeling connected to peers (Cauce, Felner, & Primavera, 1982; Connell, Spencer, & Aber, 1994), and with one's self-esteem (Teoh

& Nur Afiqah, 2010).

Children with strong defender behaviors are better at relating to and understand the thoughts, intentions and beliefs of others, display higher levels of empathy and self-efficacy, exhibition lower levels of aggression, and are better skilled at avoiding harassment from others (Camodeca & Goossens, 2005; Caravita, Di Blasio, Salmivalli, 2009; Caravita, Di Blasio, & Salmivalli, 2010; Pöyhönen, Juvonen, Salmivalli, 2010). Individuals with defender behaviors are also seen as emotionally stable (Tani, Greenman, Schneider, & Fregoso, 2003), younger (Rigby & Johnson, 2006) and female (Salmivalli et al., 1996). Individuals who display defender behaviors are also well liked and seen as popular by their peers (Salmivalli et al., 1996; Caravita et al., 2009).

Research shows that both the biological sex, and the age of a bystander influence the likelihood that an individual will intervene in a bullying situation. Findings indicate that girls are more likely to intervene in a bullying situation than boys (Oh & Hazler, 2009; Pozzoli & Gini, 2012) and that defending behaviors decrease with age, specifically with boys (Salmivalli & Voeten, 2004). Using a pairwise chi-square test, Salmivalli & Voeten (2004) found that between the ages of 9-12 years old, 9-10 year olds were more likely to defend the victim than were 10-12 year olds. Regarding substance use, studies looking at the relationship between bystanders and substance use are limited (Durand, Hennessey, Wells, Crothers, Kolbert, Lipinski, & Hughes, 2013). That said there does not seem to be any research in the literature looking at the relationship between defender behaviors and substance use.

CHAPTER II

LITERATURE REVIEW

The purpose of this study is to look at the relationship between defender behaviors in bullying situations by examining the impacts that substance use, biological sex, and age have on defender behaviors. In order to do so, it is important to start by defining the term *bullying* by looking at the research regarding bullying so to create a deeper understanding of exactly what bullying consists of. In addition to bullying, this literature review also looks at the literature on bystanders, biological sex, age and substance use as they relate to defender behaviors.

Bullying

Within the literature, the definition of bullying varies greatly (Vanderbilt & Augustyn, 2010). Olweus (1995) defines *bullying* as repeated harm, by one or more individuals, to another that is unable to defend him/herself, through either direct or indirect actions. The victim is unable to defend him/herself due to an imbalance of physical or psychological power, and for an action to constitute bullying this power imbalance must be present (Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Scheidt, 2001; Olweus, 1995). Other definitions characterize bullying as an intentional act of continually harming (Nansel et al., 2001), wherein a pattern of harassment and abuse is “done over a long period of time” (Batsche & Knoff, 1994; Hazier & Hoover, 1993). A slightly different definition of bullying from Morita, Kiyonaga, Matsuura, Arakawa,

Tamura, Ham, Takekawa, Motobe, & Takemua (1985) believes that bullying does not need to be a repeated action to be considered bullying so long as the victim perceives it as bullying (as cited in Smith, 2014). In line with Olweus (1995), bullying for the purpose of this study will be defined as a repeated direct or indirect action, aimed to cause intentional harm by one or more individuals to another who lacks the physical or psychological power to defend themselves.

Despite the many definitions, research has found some common factors associated with bullying. According to Farrington (1993), common factors of bullying include: the intent to cause one harm or distress, an imbalance of power, some form of attack or intimidations, and negative actions that are repeated and unprovoked on the part of the bully. Along with common factors of bullying, Wang, Iannotti, and Nansel, (2009) report four types of bullying: physical, verbal, relational and cyber bullying. Physical refers to physical acts of aggression, verbal refers to spoken acts of aggression, relational refers to social exclusion such as spreading rumours, and cyber bullying is aggressive acts using technology (Beale & Hall, 2007; Brank, Hoetger, & Hazen, 2012). Tsang, Hui, and Law (2011), also report extortion as another type of bullying which refers to threatening in order to get money or material things from the victim. In addition to the different types of bullying, it is important to note that bullying is social in nature and allows the victim little possibility of avoiding their bully (Bjorkqvist et al., 1982). Additionally, bullying can be direct such as hitting or name-calling, or indirect as in spreading rumors (Vanderbilt & Augustyn, 2010).

As with the definition of bullying, prevalence rates for bullying vary. In the United States, a large scale study reported that 13% of students identified as being the victim of physical bullying and 37% of students reported being the victim of verbal bullying (Wang, et al., 2009). In the United Kingdom, Whitney and Smith (1993) found that as many as 27% of children reported being bullied. A 2006 study reports prevalence rates for bullying ranging from 8.6% to 45.2% and from 4.8% to 35.8% among 13 year old boys and girls respectively (Vanderbilt & Augustyn, 2010). O'Brennan, Bradshaw, & Sawyer (2009) found that 36% of grades 4-12 students report being involved in bullying, and Kaufman, Chen, Choy, Ruddy, Miller, Fleury, Chandler, Rand, Klaus, and Planty, (2000) reported that 10% of grade 6 and 7 students have been bullied at school. According to Robers, Zhang, and Truman (2012), the Bureau of Justice Statistics reported that students aged 12-18 were victims of about 828,000 nonfatal victimizations at school, including 470,000 thefts and 359,000 violent victimizations in which 91,400 were considered serious. During a period of 6 month, 50 – 87% of students have reported being involved in a bullying situation as either a bully, victim or bystander (Tsang et al., 2011), and Due, Holstein, Lynch, Diderichsen, Gabhain, Scheidt, & Currie, (2005) found higher rates of being bullied for younger students as oppose to older ones.

There is a host of negative immediate and long-term outcomes for children involved in bullying (Cunningham, Cunningham, Ratcliffe & Vaillancourt, 2010). Victims of bullying are at the higher risk for depression (Hanish & Guerra, 2002), self-

harming behaviors (Barker, Arseneault, Brendgen, Fontaine, & Maughan, 2008), low self-esteem (Tsang et al., 2011), anxiety and psychosomatic issues such as stomachaches (Natvig, Albrektsen, & Qvarnstrom, 2001). Compared to nonbullied peers, victims tend to suffer academically, and miss more days of school (Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2008). Victimized children also feel less safe, have a harder time making friends and feel lonely (O'Brennan et al., 2009). Lastly, Olweus (2011) reports that children who were bullied are at a higher risk of committing crimes as adults. Bullies themselves are also at risk. Tsang et al. (2001) report that bullies are at risk of school dropout, gang involvement, and difficulties maintaining intimate relationships. Long-term effects for bullies include depression and suicide.

Along with a host of potential outcomes for those involved in bullying situations, research has found a number of factors that increase the likelihood of an individual being bullied. Those factors include, being male, being younger, or being viewed as weak (Hodges & Perry, 1999). Individuals who find it difficult to assert themselves and who suffer from insecurity also have an increased likelihood of being victimized (Schwartz, Proctor, & Chien, 2001; Salmivalli & Isaacs, 2005). One specific family factor known to increase the likelihood of being bullied is having over protective parents (Spriggs, Iannotti, Nansel, & Haynie, 2007), and a specific peer factor is the lack of close friends (Bollmer, Milich, Harris, & Maras, 2005). Social support can be effective in protecting individuals who are exposed to stressful events such as bullying (Thoits, 2011; Cohen, Gottlieb, & Underwood, 2000). One type of social support that is beneficial to victims is

emotional support. Emotional support contributes to one's personal adjustment, whereas teacher support contributes to the development of social skills (Malecki & Demaray, 2003).

While there are many bullying intervention programs that aim to reduce bullying at school, the effects of these programs are lackluster at best (Cunningham et al., 2010; Merrell, Gueldner, Ross & Isava, 2008). In one study, Merrell et al. (2008) analyzed the effects of 16 anti-bullying interventions and found that of a total of 108 effect sizes only 39 were found to be positive and significant. While the effects of intervention programs may not yet be producing desired results, research indicates that one important factor that does have the ability to influence bullies' behaviors and bullying outcomes are the actions of bystanders (Olweus, 2003).

Bystander

Bullying involves more than just the bully and the victim. Most often bullying takes place in social situations where individuals other than the bully (ies) and victim are present. These 'others', or *bystanders*, are important in the bullying process as they have the ability to reinforce or end bullying, even if they do not actively participate in bullying behaviors (Salmivalli et al., 1996). The term *bystander* includes anybody who is present to witness a bullying situation or who knows about it, and who may or may not participate in the situation (Twemlow, Fonagy, & Sacco, 2004). Most bullying situations occur at school during unsupervised hours, therefore bystanders are usually peers (Atlas & Pepler, 1998; Olweus, 1993). Bystanders are the largest group involved in a bullying

situation and unlike the bully, a bystander's behavior is easier to influence (Salmivalli, Voeten & Poskiparta, 2011). Though not always aware of it, bystanders are involved in the bullying situation, as even ignoring bullying sends a signal to both the bully and the victim (Obermann, 2011). Some ways in which bystanders can negatively impact the situation is through such things as cheering on the bully, joining in the bullying, or ignoring the incident completely. Ways in which the bystander can positively impact the outcome of the bullying event is by defending the victim or telling an adult (Salmivalli et al., 1996). Some ways in which bystanders can intervene in bullying situations include directly confronting the bully, seeking out a adult for help, supporting the victim by befriending them, or by expressive disapproval of the bullying behavior (Hazler, 1996).

Studies show that in approximately 85% of bullying episodes, bystanders are present (Pepler & Craig, 1995). Findings from O'Connell, Pepler, and Craig (1999) show that in bullying situations at recess in an elementary school, bystanders were present about 80% of the time, but 54% did nothing to help the victim. While there may be many reasons why bystanders do not intervene, 25% do actually step in to defend the victim, and in those cases bystanders successfully stopped bullying 57% of the time. Bystander intervention had been found to be fast and effective (Hawkins, Pepler, & Craig, 2001; Tsang et al., 2011). Sadly, 21% of the time bystanders do not take action against bullying. Instead they simply pay attention to the incident, sending the message that they believe bullying is okay and thereby reinforce bullying (O'Connell et al., 1999). Studies also show that children tend to overestimate the likelihood that they would intervene to stop a

bully episode (Salmivalli et al., 1996). Whitney and Smith (1993) found that in a sample of 8-11 year olds, half self-reported that they would step in to stop bullying, but findings by O'Connell et al. (1999) of actual observed behaviors during a bullying episode show very few children intervening. In a study by Barhight, Hubbard, and Hyde, (2013), researchers found an association between children who become emotional upset in response to viewing a video of someone being bullied, and the likelihood of them intervening when bullying happens at school. One finding by Pepler and Craig (1995) did find that during bullying incidents, bullies stop about 50% of the time if a bystander actively expressed disapproval.

As with bullies and victims, witnessing a bullying episode had negative short and long-term consequences for bystanders. Some negative outcomes of being a bystander include feeling guilty or angry with oneself for not intervening, and at the bully for bullying. Bystanders also risk feeling insecure and may begin to devote their time to avoiding bullying instead of their schoolwork, thereby suffering academically (Tsang et al., 2011). Four different bystander roles have been identified: *assistants*, *reinforces*, *outsiders* and *defenders* (Salmivalli et al., 1996). *Assistants* help assist the bully, and though they do not start the bully process, they do join in. *Reinforcers* do not actively help the bully but by doing nothing, they reinforce the message that bullying is acceptable. *Outsiders* try their best to avoid bullying situations by walking away or ignoring the bullying. *Defenders* actively support the victim by intervening to stop the bullying. This can be done by telling an adult or by confronting the bully directly

(Salmivalli et al., 1996). While Obermann (2011) found that many children see bullying as wrong, only a few will actually become *defenders* (Salmivalli, Ojanen, Haanpää, & Peets, 2005). While both *outsiders* and *defenders* are pro-victim, Gini, Albiero, Benelli and Altoe (2008) found that *outsider's* score significantly lower on self-efficacy than did *defenders* suggesting that one's self-efficacy might be important in differentiating *outsiders* from *defenders*. Tsang et al. (2011) also found empirical support for the notion that defending behaviors in bullying is related to self-efficacy. Along with self-efficacy differences between the four bystander identities, there are also numerous gender differences that effect bullying, victim, and bystander characteristics.

Regarding *defender* behaviors and social factors, Eisenberg, Fabes, Shepard, Murphy, Jones, and Guthrie (1998) believe that individuals with high levels of empathy are more likely to engage in prosocial behaviors, like intervening in bullying situations, than those with low levels of empathy. Examining a sample of 262 fifth through eight grade students, Nickerson and Mele-Taylor (2014) found that students who were more empathetic were more likely to engage in defender behaviors. More so, a study by Gouzhen, Li, and Shengnan (2004) found that levels of empathy in children ranging from 8-12 years old, was positively associated with defending behaviors and the likelihood to intervene in bullying situations. Though limited, research by Gini (2006) and Gini et al. (2008) suggests a link between likelihood to intervene and self-efficacy, noting that *defenders* and *outsiders* may have similar levels of empathy but that compared to *defenders*, *outsiders* report lower levels of self-efficacy.

Witnessing someone engage in prosocial behaviors such as intervening in a bullying situation increasing the likelihood that others will develop *defender* behaviors (Bryan & Test, 1967; Rushton & Campbell, 1977). Other factors that impacts helping behaviors include severity of victim need and personal cost of helping the victim (Batson & Powell, 2003). Prosocial bystander behaviors appear to be based on specific characteristics like empathy, an internal locus of control, fairness, and social responsibility (Batson & Powell, 2003). Research by Perren, Forrester-Knauss, and Alsaker (2012), regarding defending behaviors and self-oriented social skills (social participation, assertion) reported no relation between the two, while research by Menesini, Codecasa, Benelli and Cowie (2003), found that as a student's responsibility to help others increases, their negative attitudes and behaviors towards victims decreased. This raises the likelihood that they will intervene in bullying situations.

Biological Sex Differences

Among the genders, boys bully more than girls (Woods & Wolke, 2004). Kumpulainen, Räsänen, and Henttonen, (1999) and Kumpulainen, Räsänen, and Puura, (2001) both found that at school approximately every 1 in 5 boy has bullied, compared to every 1 in 10 girl. Not only do boys bully more than girls, but the types of bullying boys and girls experience is different. Boys are more likely to be physical bullies and to experience physical bullying, whereas girls are more likely to perpetrate and experience verbal bullying (Cunningham, Cunningham, Martorelli, Tran, Young, & Zacharias, 1998; Kumpulainen, Räsänen, Henttonen, Almqvist, Kresanov, Linna, Moilanen, Piha, Puura,

& Tamminen, 1998; Nansel et al., 2001; Wang et al., 2009); meaning boys tend to engage in direct forms of bullying, and girls in indirect forms (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Carbone-Lopez, Esbensen, & Brick, 2010; Owens & MacMullin, 1995). A study by Fernández, Fernández, Castro, Garrido, and Otero (2013) found that boys were more involved in all types of bullying than girls, except for indirect bullying which girls engaged in more often. Despite the ample amount of biological sex differences in bully, victim, and bystander behaviors, verbal bullying remains the type of bullying used most often across both sexes (Luxenberg, Limber, & Olweus, 2015).

Adolescent boys are more likely than their female counterparts to carry a weapon, more likely to get involved in fights and, when they do get involved in a fight, boys are more likely to get injured (Lowry, Powell, Kann, Collins, & Kolbe, 1998). However, Deschenes and Esbensen (1999) reported that adolescent girls are now beginning to engaging in physical bullying more than ever. Using a sample of over 160,000 students from 35 countries, a study by Pickett, Lewis, and Cash (2005) found that about 11% and 22% of adolescent girls and boys respectively, reported carrying guns. This finding shows that the biological sex differences regarding potential to inflict physical harm may be closing.

Both boys and girl are more likely to be involved in bullying incidents with members of the same biological sex, though of the two sexes girls are more likely to be bullied by boys as oppose to boys being bullied by girls (Cunningham et al., 1998; Petersen & Rigby, 1999). Boys are more likely to fear the playground due to threatened

bullying (Lillico, 2001). Boys who bully were also found to be larger and stronger than their victims (Björkqvist et al., 1992; Nansel et al., 2001). As a way to gain power, boys use sexual insults to humiliate victims more than girls (Martino & Pallotta-Chiarolli, 2001), whereas girls manipulate the relationships within the group more than boys (Gilligan, Lyons, & Hanmer, 1990; Besag, 2002).

Regarding bystander roles, research finds that boys assume the role of *assistants* and *reinforcers* more often than girls, and girls assume the *defenders* role more than boys (Oh & Hazler, 2009). Tani et al. (2003) found that individuals who identify as *outsiders* generally score lower on extraversion, and *defenders* score higher on agreeableness than the other groups. Some studies have found boys intervene more often than girls, especially if the victim or bully is also a boy, (Chaux, 2005; Hawkins et al., 2001), but overall findings show that boys, as opposed to girls, tend to be passive bystanders (Pozzoli & Gini, 2012). There are also differences in the way in which boys and girls intervene. Along with friends, boys often get back at the bully after the bullying incident, whereas girls often tell the bully to stop, and help the victim in the moment. Unfortunately, both boys and girls are just as likely to simply walk away or ignore the bullying (Trach, Hymel, Waterhouse, & Neale, 2010). As with biological sex differences, age differences also play a role in bullying situations.

Age Differences

Some studies report that physical and relational bullying declines over time (Wang et al., 2009), while other studies report indirect forms of bullying increase as age

does, and indirect aggressive behaviors last well into adulthood (Owens & MacMullin, 1995). Farrington (1993) found that fathers who bullied in school were more likely to have sons follow in their footsteps. They also found that boys who bullied are more likely to engage in anti-social behaviors and physical violence by early adulthood (Olweus, 1992). Research findings related to age and defending behaviors of bystanders vary.

In their study of 489 4th and 8th graders from 25 school classes, Pöyhönen et al. (2010) found a significant difference between age and defender behaviors. Using an analysis of variance, Pöyhönen et al. (2010) found that middle school students were less likely to defend bullying victims than were elementary school students. Specifically, while middle school children were less likely to defend bullying victims than were their elementary school counterparts, elementary school children displayed less affective and cognitive empathy. Pöyhönen et al. (2010) believed that despite 8th graders reporting feeling as capable as 4th graders did, these findings were possibly due to middle school children being more likely to act in ways that agreed with group norms, making standing up to bullies more challenging. Using a sample of 1,167 predominantly White Australian adolescents from middle-class backgrounds, Barchia and Bussey (2011) found that high school student were less likely than middles school students to report defending behaviors which is in line with finding from Pöyhönen et al. (2010) Both studies support the notion that defending behaviors decrease as age increases (Menesini et al., 2003; Salmivalli & Voeten, 2004).

That said, research by Barhight et al. (2013) using a linear regression to measure

both a classroom sample of 771 children ranging in age for 9.25 to 12.59 years old, and a laboratory sample of 80 randomly selected children aged 9.88 to 12.19 years old, found that older, not younger, students were more likely to defend victims by intervening in bullying situations. For the purpose of this study, grade level will be used to substitute for age. As with gender and age, substance use plays a role in the characteristics of bullies, victims and bystanders.

Substance Use

Adolescence is a key period for both increased bullying, as well as an introduction into substance use (D'Amico, Ellickson, Wagner, Turrisi, Fromme, Ghosh-Dastidar, Longshore, McCaffrey, Montgomery, Schonlau, & Wright, 2005; Johnston, O'Malley, Bachman, & Schulenberg, 2007). Studies show that substance use increases as adolescence moves from lower to higher grades. Marijuana use increased from 2% to 18% from grades 6 to 8, cigarette use from 9% to 22%, and that by 8th grade adolescents were reporting inhalant use 16% of the time (D'Amico et al., 2005; Johnston et al., 2007). There is a belief that problems in later life are associated with early use of substances (Grant, 1997), as well as research regarding the co-occurrence of risky behaviors (Bradshaw, Waasdorp, Goldweber, & Johnson, 2013).

Risky behaviors, such as substance use, are related to an increase in bullying among adolescents (Radliff, Wheaton, Robinson, & Morris, 2012; Tharp-Taylor, Haviland, & D'Amico, 2009). Lowry, Cohen, Modzeleski, Kann, Collins, and Kolbe

(1999) found that engagement in school violence increases with the numbers of substances adolescents used, and Carlyle and Steinman (2007) believed that the co-occurrence of aggressive behaviors and substance use might be due poor coping skills. Meaning, adolescents who engage in substance use may be trying to cope with victimization. While it is important to note the relationship between bullying and substance use, it may also be important to differentiate between one's role in a bullying situation and types of substances used.

Compared to victims of bullying and non-involved youth, bullies and bully-victim (individuals who are bullies, as well as bullied) are more likely to engage in substance use (Carlyle & Steinman, 2007; Kaltiala-Heino, Rimpela, Rantanen, & Rimpela, 2000; Nansel et al., 2001; Radliff et al., 2012) with bullies more likely to drink excessively, and bully-victims more likely to use marijuana, alcohol and prescription drug (Kaltiala-Heino et al., 2000). Using 7th-12th grade students from 133 public and private schools in Cincinnati, King, Vidourek, and Merianos (2014) found that junior high and high school students involved in school victimization incidents were twice as likely, and 1.5 times as likely, respectively, to use alcohol and be frequent episodic heavy drinkers. Meaning that adolescents that bully and those that are both the bully and the victim engage in substance use more often than their non-involved peers.

Other studies have found that bullies more often engage in cigarette use (Radliff et al., 2012), and that bully-victims were more likely to engage in frequent drinking and other substance use verses nonbullied individuals (Kaltiala-Heino et al., 2000). The

research regarding victims is inconsistent (Radliff et al., 2012). Some research indicates that victims do not engage in any substance use (Sangalang, Tran, Ayers, & Marsiglia, 2016), that victims engage in substance use more frequently than their non-involved peers (Tharp-Taylor et al., 2009), or, that it depends on the substance (Kaltiala-Heino et al., 2000).

In regards to substance use and bystanders, Rivers, Poteat, Noret, and Ashurst (2009) looked at the relationship between bystanders and levels of substance use, hypothesising that the more a bystander witnessed bullying the higher their substance use levels would be. Using 2,002 adolescents aged 12-16 years from 14 public schools in England, research found that witnessing bullying was a predictor for increased substance use levels. Rivers et al. (2009) believed that, in keeping with finding from D'Augelli, Grossman, Salter, Starks, Vasey, and Sinclair (2005), this might be due to bystanders experiencing psychological re-victimization because of their empathetic feelings for the victim. Durand et al. (2013) believed that there was little research in regards to bystanders and substance use, and that this was a relationship that needed more research. To the knowledge of the author, there does not seem to be any research on the relationship between the specific bystander role of defender, and substance use in the literature at present time.

Purpose and Research Questions

The current study aims to further the area of bystander behaviors in rural schools, specifically defender behaviors in bullying situations, by exploring the possible relationship between defender behaviors and defender behaviors, biological sex and age. Based on the previous research in the area of bullying, bystander behaviors, biological sex differences, age differences and substance use, the following research questions will be tested:

R1) Is there a relationship between high defender behaviors and substance use in adolescents in rural schools?

H1) Based on the research in this area, it is hypothesised that adolescents in rural schools will display small to moderate negative correlation between defender behaviors and substance use.

R2) Do boys in rural schools display lower levels of defender behaviors than girls in rural schools?

H2A) Based on the research regarding biological sex differences in bystander behaviors, it is hypothesised that rural middle school males will be less likely to intervene and display defender behaviors than rural middle school females.

H2B) Based on the research regarding biological sex differences in bystander behaviors, it is hypothesised that rural high school males will be less likely to intervene and display defender behaviors than rural high school females.

R3) Is there a relationship between age and defender behaviors in adolescents in rural schools?

H3) Based on the research regarding age and defender behaviors, it is hypothesis that there will be a moderate negative correlation between age and defender behaviors in adolescents from rural schools.

The primary goal of this study is to address the likelihood of a bystander displaying defender behaviors in a bullying situation in rural schools, and the impact that substance use, biological sex, and age play on predicting defender behaviors.

CHAPTER III

METHODS

Participants

A total of 332 participants were surveyed from six Northern Plains schools in rural farming communities. According to the United States Department of Agriculture Economic Research Service website, there are many different definitions for the term rural. According to the website, the most widely recognized definition of rural is ‘all territories outside of urban areas’. Urban areas, according to the same website, have two categories and are defined as a urban area (UA) of 50,000 or more people, and a urban cluster (UC) which is a area of fewer than 50,000 people but more than 2,500 people. The United States 2010 Census website had a similar definition of rural, defining rural as ‘all populations, housing and territories not included within a urban area’ and classifying urban into the same categories with the same numbers as did the United States Department of Agriculture Economic Research Services website. Based on those definitions, rural for the purpose of this study will be defined as agrarian, sparsely populated communities under 1000 people within approximately one hour from a larger (20,000 plus) city. Of the 332 total participants only data from 264 were analyzed (121=males, 140=females), as 4 choose not to complete the survey, 5 were eliminated due to random responding, 18 started the survey but did not complete the measures, and 41 indicated that they had not seen bullying and were therefore excluded from a analysis of a scale that measured defender behaviors in bullying situations. Participants ranged

from 6th-12th grade, with all six Northern Plain schools having participated in the Olweus Bullying Prevention Program (OBPP) (Olweus, 1991). The Olweus Bullying Prevention Program (OBPP) is only given in middle school, and has been in effect for the last three years. Meaning that all grade levels participating, except for current grade 12th students have been exposed to this training. While this creates an interesting difference between grade 12 students and the rest of the participants, rural schooling is often done in the same building from start to finish. Therefore at minimum, grade 12 students are exposed to prevention flyers and able to talk with other students who have received training. Participation was voluntary, and subject to parental consent. 72.3% identified as Caucasian-American, 8.3% as American Indian, 8.3% as Latino/Latina-American, 1.5% as Pacific Islander, .8% as African American, 0% as Asian Americans, and 11.4% as Other. Total numbers and percentages for sexual orientation reflect only that of grade 9-12 students, due to developmental concerns. Table 1 provides more information regarding demographics.

Table 1.

Demographic Characteristics of Safer Tomorrow's Sample.

	N	%
Sex†		
Male	121	45.8
Female	140	53.0
Other	2	.8
Not Reported	1	.4

Table 1. cont.

	N	%
Ethnicity†		
Caucasian/White	191	72.3
American Indian	22	8.3
Latino/Latina/Hispanic	22	8.3
Pacific Islander	4	1.5
African American/Black	2	.8
Asian American	0	0
Other	30	11.4
Sexual Orientation††		
Heterosexual	85	32.2
Gay or Lesbian	1	.4
Don't want to say	1	.4
Other	1	.4
Not Reported	176	33.3
Grade†		
6 th	97	36.7
7 th	43	16.3
8 th	36	13.6
9 th	22	8.3
10 th	18	6.8
11 th	22	8.3
12 th	26	9.8
Length of Time at Current School†		
Just this year	22	8.3
1 year before this	17	6.4
2 years before this	8	3.0
3 or more years before this	216	81.8
Not Reported	1	.4
First Language†		
English	255	96.6
Spanish	8	3.0

Table 1. cont.

	N	%
French	1	.4
Live With†		
Both Parents	166	62.9
With Mom	26	9.8
With Dad	8	3.0
Mom and Step-Parent	30	11.4
Dad and Step-Parent	12	4.5
Other Legal Relative	6	2.3
Adoptive Parents	2	.8
Other	13	4.9
Not Reported	1	.4

Note: †Indicates of those reporting. ††Sexual orientation was only reported by grades 9-12, *not reported* indicates grades 6-8.

Measures

All participants completed an informed consent and a demographic questionnaire. The informed consent described the nature and justification of the study and demonstrated participant's voluntary involvement. The demographic questionnaire asked participants to include their grade, their gender, their ethnicity, their school, the length of time at said school, their primary language and their family structure.

All participants then completed a locally created survey regarding bullying; specifically the defender behavior scale and the substance use scale.

Defender Behaviors Scale. Defender behaviors were assessed using the defender behavior scale created by the authors for this survey. The defender behavior scale is a 7-

item scale presented in a 5-point Likert format ranging from never, rarely, sometimes, usually and always. The defender behavior scale examines a bystander's ability to intervene in a bullying situation. This scale is based on the theoretical underpinnings of Salmivalli's (1998) Participant Role Questionnaire (PRQ), a questionnaire that addressed several different roles children who observe bullying can engage in. We were specifically interested in the defender role, and consequently created seven unique items that reflect the theoretical definition found in the defender role portion of Salmivalli's (1998) scale. The behaviors captured by the defender behavior scale range from stepping in to stop a bullying situation, to getting help from an adult, to supporting the victim. Individuals who score high on the defender behavior scale display higher levels of defender behaviors in bullying situations, whereas individuals who score low display lower defender behaviors in bullying situations. Salmivalli indicated an alpha of .92 for the Defender portion of her scale, and a sample item for our defender behavior scale includes: "*When I see someone being bullied I say something to try to stop it.*"

For the current study, the coefficient alpha for the defender behavior scale was .95. The Principal Component Analysis (PCA), which measures what percentage of variance a single unifying factor accounts for, was 78%. Component loading for individual items ranged between .82-.92.

Substance Use Scale Substance use was assessed using the Substance Use Scale, created by the Safer Tomorrows staff, which is a 6-item scale presented in a 5-point Likert format ranging from 0 days, 1-5 days, 6-9 days, 10-19 days and 20-30 days.

The substance use scale addresses the use of alcohol or illicit drugs within the past 30 days. The substance use questions are premised by the statement *“The next questions are about TOBACCO, ALCOHOL, and other DRUGS. The definition of a “drink” of alcohol is ONE 6 oz glass of wine, or ONE 12 oz bottle or can of beer, ONE wine cooler, ONE shot glass of hard liquor”* and sample items for our substance use scale include: *“During the past 30 days, how often did use other drugs (meth, speed, cocaine, or ecstasy)?”*

Adolescents who score high on the substance use scale display more self-reported substance use behaviors, whereas adolescents who score low on the substance use scale do not present with self-reported substance use behaviors. On previous surveys conducted by Safer Tomorrows’ staff, the substance use survey had a coefficient alpha of .87, and the Principle Component Analysis (PCA), which measures the underlying structure in the data and the variance accounted for, was 69%. On the current survey conducted, coefficient alpha was comparable at .86, with the PCA accounting for .65% of the variance accounted for. Component loading for the current survey ranged from .58-.89.

Procedures

After completing an informed consent and a demographic questionnaire, each individual participant then completed the Safer Tomorrows survey in its entirety. Surveys were given electronically by researchers at the schools, filled out individually and anonymously, and were completed in under 30 minutes. The survey was approved by the UND Institutional Review Board.

Analysis

In order to see if there was a relationship between defender behaviors and substance use in adolescents in rural schools, the researcher completed a correlation analysis. Both defender behaviors and substance use were considered continuous variables, and I hypothesize a weak to medium negative correlation between the two variables.

To see if males showed lower levels of defender behaviors than females in rural schools the researcher conducted two independent t-tests, one for rural middle school males and females, and another for rural high school males and females. For this question, defender behaviors were considered a continuous dependent variable, and biological sex a categorical independent variable. I hypothesis that males in both rural middle and high school will display lower levels of defender behaviors than will their females counterparts.

To analyse the relationship between defender behaviors of adolescents in rural schools and age, the researcher conducted a correlation analysis. Both defender behaviors and grade, which was used in place of age, were considered continuous variables. I hypothesised a medium negative correlation between the two variables. .

CHAPTER IV

RESULTS

This section is arranged in order of hypotheses, and presents findings regarding defender behaviors of adolescents in rural schools by substance use, biological sex, broken down by grade level for rural middle and high school students, and age. For the purpose of this study, grade is used as a substitute for age.

Hypothesis 1: Defender Behaviors and Substance Use. Hypothesis 1 stated that rural adolescents would display a small to moderate negative correlation between defender behaviors and substance use. A correlation analysis was completed to determine the strength of the relationship between defender behaviors and substance use among rural adolescents. Results show a significant small negative correlation between the two variables, $r(251) = -.17, p < .001$. This finding corroborates Hypothesis 1. The results of the correlation analysis for hypothesis 1 are reported in Table 2.

Post Hoc Analysis. A correlation analysis was run to determine the strength of the relationship between defender behaviors and substance use in rural high school students. This analysis was done as rural middle school students reported considerably lower substance use behaviors than do rural high school students. Results show a significant moderate negative correlation between the two variables when controlling for rural middle school students, $r(83) = -.31, p < .001$. The results of the correlation analysis are reported in Table 2.

Table 2.

Correlation between Scales, correlations on the bottom diagonal (N = 264) reflects total rural school population, correlations on the top diagonal (N = 88) reflects rural high school population.

Variable	DB	SU	HGrade
DB	-	-.31**	-.09
SU	-.17**	-	.34**
Tgrade	-.14*	.30**	-

Note: **Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

DB = Defender Behavior. SU = Substance Use. Tgrade = Total Rural Grade.

Hgrade = Rural High School Grade.

Hypothesis 2: Defender Behaviors and Biological Sex Differences. In regards to defender behaviors and biological sex differences, two separate hypotheses were formed. The first hypothesis, hypothesis 2A, stated that rural middle school males are less likely to intervene and display defender behaviors than rural middle school females. An independent *t* test was conducted to evaluate this hypothesis. In regards to this hypothesis no significant results were found. Specifically, an independent *t* test was found to be non-significant, $t(171) = -1.78, p = .08$. Rural male middle school students ($M = 21.28, SD = 7.76$) were just as likely to display defender behaviors as rural middle school females ($M = 23.41, SD = 7.84$). The 95% confidence interval for the difference in means ranged from -4.48 to .23. The results of this statistical test do not support hypothesis 2A.

A independent t test was also conducted to evaluate hypothesis 2B, that rural high school males are less likely to intervene and display defender behaviors than rural high school females. No significant results were found. An independent t test was found to be non-significant, $t(86) = -1.95, p = .06$. Rural high school males ($M = 18.14, SD = 7.59$) were just as likely to display defender behaviors as high school females ($M = 21.07, SD = 6.51$). The 95% confidence interval for the difference in means ranged from -5.92 to .06. The results of this statistical test do not support hypothesis 2B. The results of the t tests for hypothesis 2 are reported in Table 3.

Table 3.

A Comparison of Means and Standard Deviations of Defender Behaviors Scores for Rural Middle School Male (N = 78) and Female (N = 95) Students and Rural High School Male (N = 43) and Female (N = 45) Students.

Population	Males		Females		t	df	p
	M	SD	M	SD			
Middle Sch	21.28	7.76	23.41	7.84	-1.78	171	.08
High Sch	18.14	7.59	21.07	6.51	-1.95	86	.06

Notes: Middle Sch = Rural Middle School Students. Rural High Sch = High School Students

Hypotheses 3: Grade and Defender Behaviors. Hypothesis 3 stated that results would show a moderate negative correlation between grade and defender behaviors. A correlation analysis was run to determine the strength of the relationship between grade and defender behaviors of adolescents in rural schools. Results show a non-significant

small negative correlation between the two variables, $r(262) = -.14, p = .02$. These findings do not support hypothesis 3. The results for hypothesis 3 are reported in Table 2, bottom diagonal.

CHAPTER V

DISCUSSION

The goal of this study was to look at the relationship of substance use, biological sex, and age with defender behaviors of adolescents in rural school during bullying situations. This section explores the results of the current study in comparison with the current literature, and well as the limitations and future directions regarding these important issues.

Hypothesis 1 looked at the relationship between defender behaviors and substance use among rural adolescents, predicting that those who identified as defenders would be less likely to use substances. Results provided support for this hypothesis, showing a small negative correlation between defender behaviors of adolescents in rural schools and substance use. While studies have found that bystanders who witness bullying show higher substance use levels (Rivers et al., 2009), other research suggests that higher levels of self-efficacy sets defenders apart from other bystanders (Gini, 2006; Gini et al., 2008). Though specific literature on the relationship between defender behaviors and substance use is lacking, based on previous research in related areas, the researcher believes that one reason why defenders may be more likely to intervene is due to their increased self-efficacy. Intervening may be a way to keep from feeling guilty or angry with themselves, which in turn may lower their levels of substance use. On the other hand, one could also argue that individuals who do not use substances are individuals who are naturally more likely to engage in prosocial behaviors, such as intervening in bullying situations, in

general. Eisenberg et al. (1998) felt that individuals with higher level of empathy were more likely to engage in prosocial behaviors, and findings by Nickerson and Mele-Taylor (2014) and Gouzhen et al. (2004) showed that higher levels of empathy did indeed increase likelihood of defender behaviors. Essentially, findings show that adolescents who identify as defenders during bullying situations show lower levels of substance use in middle and high schools in rural communities. Keeping in mind that a correlation analysis simply looks for a relationship between variables, and that most variables will produce some type of relationship regardless of what those variables are. Meaning that while a relationship between defender behaviors and substance use was found, there is the possibility that this finding is simply due to the type of analysis used.

Post hoc analysis for hypothesis 1 produced interesting findings in regards to defender behaviors and substance use by school level. When removing rural middle school student participants from the statistical analysis, significant results increased from a small negative correlation to a moderate negative correlation. Middle school participants were removed from consideration because there was a noticeable difference in substances use between rural middle and high school students. Specifically, rural middle school students were less likely to use substances than rural high school students. With easier access to substances, paired with research with supports the findings that substance use increases as adolescents move into higher grades (D'Amico et al., 2005), researchers were surprised to discover that current findings did not seem to be following this trend. On the contrary, when controlling for rural middle school students, findings

not only remained significant but grew in strength, meaning that rural high school adolescents who display defender behaviors are even more likely than their middle school counterparts to show lower levels of substance use. Due to the correlational (and therefore non-causative) nature of these findings, we wondered if there is a common underlining phenomenon (such as prosocial self-efficacy) that impacts both the experience of displaying defending behaviors and the confidence or motivation to not engage in substance use.

Hypothesis 2 looked at the relationship between defender behaviors and biological sex, and was broken down into two separate hypotheses. One hypothesis looked at rural middle school adolescents and the other at rural high school adolescents. At both school levels, it was predicted that males would be less likely to intervene and display defender behaviors compared to females of the same grade level. Males were predicted to intervene and display defender behaviors less than females in keeping with research that finds that boys bully more than girls (Woods & Wolke, 2004), boys are more likely to get into fights (Lowry et al., 1998), and boys are less likely to assume the role of defender than are girls (Oh & Hazler, 2009). Findings from the current study did not support previous finding regarding biological sex and defender behaviors. The current study is not alone in its finding that middle and high school males were just as likely to display defender behaviors as their female counterparts. Though the majority of studies regarding biological sex and defender behaviors do find males to be more passive bystanders than females, research by Chaux (2005) and Hawkins et al. (2001) have both

found that it is males, not females who are more likely to intervene in bullying situations. Intriguingly, while non-significant, the difference between biological sex and defender behaviors for rural high school males versus rural middle school males was approaching significance and seems to be heading in the desired direction ($t = -1.95, p = .06$). One potential explanation for this difference may be due to the difference in the sample size between rural middle (N = 173) and high school (N= 88) adolescents.

Finally, hypothesis 3 looked at the relationship between age and defender behaviors. As age was not collected as part of the demographic survey, grade level was used in place. Based on research by Pöyhönen et al. (2010), and Barchia and Bussey (2011), that older adolescents are less likely to defend bully victims than younger adolescents, and findings by Barhight et al. (2013), that older not younger adolescents are more likely to defend victims in bullying situations, it was predicted that age would be moderately negatively correlated with defender behaviors. Results were not significant and did not support previous research. Instead, results from the current study found no relationship between age and defender behaviors in rural adolescents. These finding could possibly be due to participants in this study being from rural schools where everyone knows everyone and where one's schooling career takes place from start to graduation in the same building surrounded by many of the same individuals. This could mean that bullying is less likely in rural communities as everyone knows and has known each other for most of their lives. Oppositely, bullying habits in rural schools may become engrained, meaning that no significant results were found between defender

behaviors and age due to the possibility that patterns of interpersonal interactions may become habitual in small communities—especially in a small school where that same individuals share the same classroom peers from kindergarten to twelve grade.

When taken together the results of the current study paints a unique picture in regards to defender behaviors in bullying situations in rural communities. Though other factors and characteristics are essential in understanding what predicts defender behaviors, the present results highlights the role substance use seems to plays. While neither biological sex nor age seems to play a role in defender behaviors in rural communities, lower levels of substance use in adolescents is related to the likelihood of engaging in defender behaviors in rural communities. Likewise, higher levels of substance use in adolescents, is linked to lower levels of defender behaviors in rural communities. Moreover, this relationship is stronger in rural high school adolescents than rural middle school adolescents. That means that defender behaviors among adolescents in rural communities are unaffected by biological sex or age differences. Instead, substance use is an important factor in better understanding what prompts adolescents in rural communities to intervene and display defender behaviors in bullying situations. Together, these findings add to the current body of literature regarding defender characteristics, specifically in regards to rural communities.

Limitations and Future Directions

As with most studies, this study has several limitations as well as directions for future research. Firstly, while there is previous research in the field of bullying and

substance use, research regarding substance use and defender behaviors specifically is lacking. Lack of previous research acts as both a limitation as well as a strength. The lack of previous research makes understanding the relationship between substance use and defender behaviors difficult. Therefore it is unknown whether the measures used in this study were the best choice to assess the relationship between defender behaviors and substance use. The scales used in this study were both created for the study and have not been previously used or tested. While both scales have strong psychometric properties, they are still not fully and formally normed for the population in question. Future research would benefit from making defender behaviors a major focus of substance use research. As well, with the lack of previous research this study was exploratory in nature, and therefore this researcher is not able to say if these results would be upheld or strengthened. In order to be sure, these results would need to be replicated in future studies.

Secondly, 72.3% of the sample identified as Caucasian/White. While the diversity of the participants in this study is representative of rural Northern Plains communities, it may not represent the populations and culture of rural communities throughout the United States. Due to this, one cannot be sure if the results found in the current study extend to the overall population. Simply, the sample population may not be representative of the country's general population. Future research could attempt to utilize participants from a more general sample.

Additionally, the measures used in this study were self-report measures, which is

limited as it can rarely be independently verified meaning that responses must be taken at face value. This risks having participants not answering honestly for many different reasons. For instance, participants may not be completely honest in an attempt to make themselves look more socially desirable, or because they have inferred what the experimenter is looking for and tailor their answers to fit that expectation. In particular, previous research shows that children tend to overestimate their likelihood of intervening in bullying situations. O'Connell et al. (1999) found that during bullying situations, despite 41% of children indicating on the questionnaire that they would attempt to intervene, when observed children only intervened 25% of the time. Essentially, peers seem to truly want to intervene, but for whatever reason, rarely do. In addition, future research may want to attempt to use other measures to gather thorough data.

In regards to the types of analysis used, correlations present their own series of limitations. Correlations look at the relationship between variables and despite what the variables are, the probability of some sort of relationship existing is usually high. Along with that, correlations are limited in the fact that they find relationship between variables but cannot prove cause and effect between variables. Meaning, a correlation cannot prove causation.

A final limitation is possible selection bias. As participation in this study was voluntary, it is possible that individuals who chose to participate in the current research have higher levels of prosocial behaviors, which may have skewed the results. Previous research in the field of bullying supports the link between higher prosocial behaviors and

increased likelihood to display defender behaviors (Eisenberg et al., 1998). Therefore individuals who chose to participate in the current study may already have higher levels of defender behaviors than those who chose not to participate.

Conclusion

This study came about with the goal of expanding the area of bystander behaviors, specifically defender behaviors, in bullying situations. The results of this study may provide many starting points for future research within the field of defender behaviors. This research has also helped to shed some light on the distinct lack of research regarding defender behaviors and substance use within the literature. Though this study did find a significant negative correlation between substance use and defender behaviors in adolescents from rural communities, the results did not support previous research regarding the effect of biological sex or age on defender behaviors as was predicted. The results from this study add to the growing body of research regarding bullying, and contribute to better understanding which characteristics play a role in defender behaviors in adolescent populations.

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