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Victimization Rates Among Deaf and
Hard of Hearing College Students

by

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A Capstone Project Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Science in Criminal Justice

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Introduction

Intimate partner violence (IPV) is receiving increased focus in society, with high profile examples of victimization involving athletes, actors, and politicians being discussed frequently. Society is more accepting of reporting issues of abuse and seeking help for victims. As awareness of domestic and intimate partner violence has increased, resources to address this issue are likely being utilized more. However, some populations are likely being overlooked, underserved, or excluded from accessing these resources. Deaf and hard of hearing individuals are among those who are underrepresented in the existing research on intimate partner violence. Research on victimization among Deaf and hard of hearing people is limited, and is even further limited among Deaf and hard of hearing college students. This is particularly concerning, as the number of incidents on college campuses involving IPV rises. A February 18, 2017 New York Times article, “Universities Face Pressure to Hold the Line on Title IX”, reported that 227 colleges and universities were under investigation for more than 300 Title IX violations. Among the institutions being investigated are Ivy League schools and other highly regarded programs. Colleges and universities are attempting to educate and prevent these incidents from happening in the wake of an exposure of inadequate reporting and support systems. Potential implications of these shortfalls in research include impacts on funding for prevention and education programs, particularly for those individuals who are underrepresented in the research. Stated, differently, problems of unknown magnitude are unlikely to be carefully addressed, hence this

research's focus on the underserved and overlooked population of Deaf and hard of hearing.

The first purpose of this study is to determine whether data collected indicated significant correlations between auditory status and intimate partner victimization among Deaf and hard of hearing students. The second purpose is to determine if Deaf and hard of hearing college students would be victimized at higher rates than their hearing peers based on higher rates of childhood exposure to family violence. Lastly, the challenges with surveying the Deaf community will be addressed with an emphasis on a modified research method as a recommendation to improve the current study.

Abuse Among College Students

Numerous studies have found that college students are at a significant risk of experiencing partner violence. It has been estimated that nearly one-third of college students have been involved in some form of physical abuse in dating relationships as either a victim or a perpetrator (Cogan & Ballinger, 2006; Orcutt, Garcia, & Pickett, 2005; Perry & Fromuth, 2005). Studies using nationally representative and large samples of college students report estimates of physical partner victimization that ranged from 16% to 34% (Daley & Noland, 2001; Gover, Kaukinen, & Fox, 2008; Graves, Sechrist, White, & Paradise, 2005; Neufeld, McNamara, & Ertl, 1999; Orcutt, Garcia, & Pickett, 2005; Porter & Williams, 2011b; Sabina & Straus, 2008; Smith, White, & Holland, 2003). Despite the

prevalence of physical abuse among college students, psychological abuse often accompanies physical abuse and is more commonly reported with as many as 80% of students reporting experiencing psychological abuse (Avant, Swopes, Davis, & Elhai, 2011; Black, Sussman & Unger, 2010; Cercone, Beach, & Arias, 2005; Forke, Myer, Catallonzi, and Schwartz, 2008; Harned, 2001; Hines & Saudino, 2002; Hines & Saudino, 2003).

While earlier studies have primarily focused on men as perpetrators and women as victims of dating violence, recent studies have found that both men and women perpetrate and experience violence. For example, Williams, Ghandour, & Kulb (2008) in their review of studies examining female perpetrated physical abuse and psychological abuse among college students, in 14 of the 15 studies, rates for physical abuse ranged from 11.7% to 39% and five of the fifteen studies reported rates of 40.4% to 89.3% for psychological abuse. Another study of 910 students on three college campuses found that during their college years, 10.2% of women and 2.8% of men experienced physical abuse and 16.2% of women and 5.9% of men reported experiencing psychological abuse (Forke et al., 2008). On the other hand, other studies suggest that men and women receive and inflict abuse at similar rates. Cercone et al.'s (2005) study of 414 college students found that women and men were equally likely to commit minor acts of violence (e.g., slapping, kicking, and biting) against their partner. Similarly, Harned's (2001) study of college men and women reported that both genders experienced similar rates of physical abuse from their partners.

Sexual assault is also a significant issue on college campuses. Young women experience the highest rates of sexual assault among all age groups, which includes college-aged women. The Sexual Victimization of College Women study, completed in 2000, found that 2.8 percent of college females had experienced either a completed rape (1.7 percent) or an attempted rape (1.1 percent) within a 9-month timeframe (Fisher et al., 2000). More recently, the Campus Sexual Assault (CSA) Study found 13.7% of undergraduate women had been victims of at least one completed sexual assault since entering college. Of those that reported victimization, 4.7% were victims of physically forced sexual assault, 7.8% of women were sexually assaulted when they were incapacitated after voluntarily consuming drugs, alcohol or both, and 0.6% were sexually assaulted when they were incapacitated after having been given a drug without their knowledge (Krebs et al., 2007). While most studies investigating sexual assault victimization among college women have been cross-sectional, Humphrey and White (2000) surveyed women from one university each year while in college. The researchers found that annual prevalence rates declined slightly each year. During their first year of college, 31% of the women experienced sexual assault and 6.4% experienced completed rape. In their fourth year of college, 24% of the women experienced a sexual assault and 3.9% experienced completed rape.

Although more limited, some research has reported the sexual victimization experiences of college men. For example, results from the National College Health Assessment Survey revealed that 2.5% of college women and 0.7% of college men

reported sexual penetration without their consent and 3.9% of college women and .9% of college men reported attempted sexual penetration without their consent within the past school year (American College Health Association, 2014). Smaller scale studies that have included male victims of sexual assault found 12% of male respondents reported forced sexual contact (Struckman-Johnson & Struckman-Johnson, 1994) and reported rates of experiencing unwanted sexual contact ranging from 18.5% to 31% in the past year or academic year (O'Sullivan, Byers, & Finkelman, 1998; Larimer, Lyndum, Anderson, & Turner, 1999; Palmer et al., 2009).

In the 1980's, a series of incidents that involved sexual assault of college women led to a heightened awareness of sexual victimization on college campuses. Numerous lawsuits against post-secondary institutions followed, leading to legislation to address the lack of a safe college environment. The legislation led to requirements that colleges and universities distribute information about its crime prevention programs and security policies (Fisher, Culler & Turner, 1999).

Although Title IX was a part of legislation from 1972, it was not until recently that it was used as a strategy to combat sexual crimes on college campuses. Sexual assault on college campuses is worrisome especially because sexual violence seems to be correlated with increased risk of more severe injury (Coker, Hall-Smith, McKeown, and King, 2000).

Abuse Among Persons with Disabilities

Although research is limited, when compared with the general population, women with disabilities experience abuse at similar or increased rates (Grossman & Lundy, 2008; Martin, S. L. et al., 2006; Nosek et al., 2001; Powers et al., 2009; Smith & Strauser, 2008; Young, M. E., Nosek, M. A., Howland, C., Chanpong, G., & Rintala, D. H., 1997). In an earlier study, 62% of women with disabilities and women without disabilities were found to have experienced emotional, physical and sexual abuse at some point during their life (Young et al., 1997). This study found no significant differences in the percentage of women abused, regardless of disability status or type of abuse. More recently, Coker, Smith, & Fadden (2005) interviewed over 1,100 women in a family practice setting. Their study showed that women who reported some type of abuse in their current relationship were more than twice as likely to report having a disability. Another study compared the prevalence of physical and sexual assault among women with and without disabilities. Findings indicated that women with disabilities are four times more likely to have experienced a sexual assault, while rates of physical abuse were consistent with those experienced by women without disabilities (Martin et al., 2006).

Although more limited, some research has reported the victimization experiences of men with disabilities. Mitra, Mouradian, and Diamond (2011) found that like women with disabilities, men with disabilities are also at a high risk to be victims of sexual violence. The results of their study show that men with

disabilities are four times more likely to become a victim of sexual violence than men without disabilities. According to their results, not only are men with disabilities at higher risk than men without disabilities, they also had a victimization rate higher than women without disabilities.

Studies also show that children with disabilities are more likely to experience abuse than their non-disabled peers. In a study of just over 50,000 school-aged children, Sullivan and Knutson (2000) found that the prevalence of maltreatment in children with disabilities was 31% compared to 9% in children without disabilities. In a meta-analysis of several studies, Lund and Vaughn-Jensen (2012) found that children with disabilities were more likely to experience sexual abuse than children without disabilities.

Abuse Among the Deaf and Hard of Hearing

Collectively, studies examining abuse among persons with disabilities highlight that they are at a higher risk for abuse compared to persons without disabilities. However, while these studies are informative, these studies are limited in that specific disabilities are not discerned. It is crucial that each type of disability be examined separately as the risk factors for sexual assault associated with specific disabilities (e.g., deafness, physical mobility) as well as the barriers to access services may be quite different depending on the specific type of disability. Deaf survivors of sexual assault experience unique issues that may serve as barriers to seeking help including issues of stereotypes, language, communication,

and confidentiality (Anderson & Kobek Pezzarossi, 2014). In a 2006 study examining the needs of Deaf sexual assault victims, Obinna and colleagues found that when Deaf individuals report sexual assault, they not only face stereotypes about being a victim of sexual assault but also the stereotypes of being Deaf. Moreover, while rape victims often have feelings of guilt and embarrassment due to the social stigma attached to sexual assault, these feelings are often compounded in the Deaf community due to its small, close-knit nature. This closeness in turn may impact the Deaf victim's willingness to report in that it may compromise anonymity and erode privacy. Additionally, many Deaf victims of sexual assault perceive a lack of support within the Deaf community, particularly if the perpetrator is also Deaf. Accordingly, Deaf victims can experience a profound sense of isolation (Obinna et al., 2006).

It is important to know that there are varying perspectives about the term disability and its use among the Deaf community. Disability is an all-encompassing term that includes individuals who are deaf and hard of hearing. The perspective of the medical community is that having a hearing loss qualifies as a disability. According to Padden and Humphries (2005), the Deaf community does not see their lack of hearing as a disability and instead embraces all that comes along with being Deaf, including the use of American Sign Language (ASL is USA specific; each country has its own signed language), and as being a cultural aspect of a group. It should be noted that not everyone who has hearing loss identifies with being Deaf. As a result, researchers developed a convention of using a capitalized "Deaf" to refer

to the culture and the individuals who identify with it, while using a lower case “deaf” to refer to the condition of deafness as well as individuals who do not identify with the culture. One should also note that regardless of being “Deaf” or “deaf”, the amount of hearing loss can range from being profoundly deaf to having the majority of hearing in one or both ears (Padden & Humphries, 2005).

When children, either hearing or Deaf, have limited exposure to language, significant barriers to fluency may result. Limited exposure to language in hearing children is rare, due to their constant engagement in a world where spoken language is prominent. Unless deaf children are exposed to accessible language, they stand at higher risk for language dysfluency (Tate, 2012). According to Glickman (2008), language dysfluency is the inability to communicate fluently in any language. Deaf individuals who have some language dysfluency are at greater risk for victimization and are shown to underutilize services after being victimized. This could be due to a lack of awareness that what they experienced falls under trauma, or because of the stigma associated with being abused within the community (Obinna, Krueger, Obsterbaan, Sadiusky, & DeVore, 2005; Tate, 2012). Obinna et al., (2005) report that limited resources that cater to the Deaf community, a lack of confidence in interpreting services, and the inability to rely on the Deaf community for support are significant factors affecting victims. These factors along with language dysfluency are likely to contribute to underreporting of victimization by Deaf and hard of hearing individuals.

According to Sullivan, (1987) Deaf children experience sexual abuse at a much higher rate than their hearing peers. Sullivan found that 10 and 25 percent of hearing boys and girls report sexual abuse where as 54 and 50 percent of deaf boys and girls report sexual abuse. Schenkel et al. (2014) posited that not only were Deaf and hard-of-hearing children victimized more than their hearing peers, but also that the severity of deafness increased the risk of victimization. The role of the residential school for the deaf is also important. Residential schools have been shown to be a risk factor for sexual abuse of Deaf or hard of hearing students who receive their schooling there (Sullivan & Knutson, 1998; Sullivan, 2009).

Childhood maltreatment carries lasting effects to Deaf and hard of hearing men and women. Although childhood maltreatment was a predictor for adult revictimization, the rates of revictimization among Deaf and hard-of-hearing men and women were nearly five times higher than their hearing counterparts (Schenkel et al., 2014). The findings of Pollard, Sutter, & Cerulli (2014) are consistent with previous research which indicated that sexual violence is more frequently experienced by Deaf persons. Schild and Dalenberg (2015) report the odds ratio for revictimization in adulthood as 6.69 for Deaf adults that experienced childhood sexual trauma.

Abuse Among College Students with Disabilities

An increasing number of students with disabilities are enrolling in college. According to Students With Disabilities at Degree-Granting Postsecondary

Institutions (2011) out of 4,170 2-year and 4-year degree-granting postsecondary institutions that were surveyed, 3,680, or 88 percent, enrolled students with disabilities. Out of the 88 percent, there were 645,700 unduplicated students who self-reported a disability. Four percent or approximately 26,000 students were in the “difficulty hearing” category that included both deaf and hard of hearing students. Increased numbers of students with disabilities has led to an increased risk of IPV on college campuses. The majority of research has overlooked how disabilities factor into the risk of experiencing IPV for college students (for exceptions see, Porter & Williams, 2011; Scherer, Snyder & Fisher, 2013; Anderson & Pezzarossi, 2012; Anderson & Leigh, 2011; Anderson & Leigh, 2010).

In a recent study, Scherer, Snyder, and Fisher (2013) examined whether having a disability is a risk factor for both female and male college students. They found that college students with disabilities are twice as likely to be victims of IPV than those without a disability. Other studies have also found that both male and female college students with disabilities are at greater risk for IPV than their peers without disabilities (Porter & McQuiller Williams, 2011a; McQuiller Williams & Porter, 2014). Research findings show some differences in experience of IPV related to gender. For example, Scherer, Snyder, & Fisher (2013) found that females with disabilities were victims of psychological and sexual IPV more than males with disabilities in both heterosexual and same sex relationships. No significant differences were found for physical IPV in males and females with disabilities. Porter and McQuiller Williams (2011a) report similar findings in their sample of

more than 1,000 students at a campus in Upstate New York. However, women were more likely to report psychological IPV than men and men were more likely to report physical IPV than women.

In general, research indicates both males and females with disabilities are at higher risk for IPV relative to their peers without disabilities (Porter & McQuiller Williams, 2011a; Porter & McQuiller Williams, 2011b; Scherer, Snyder, & Fisher, 2013). However, Scherer, Snyder, & Fisher (2013) found that females with disabilities are generally at greater risk for IPV than their male peers. Females with disabilities made up a greater proportion of total, psychological, and sexual IPV victims. No significant differences were found among males and females with disabilities in regard to physical IPV. These findings build on earlier results that indicate men and women experience abuse at similar rates (Larimer, Lydum, Anderson, & Turner, 1999; Porter & McQuiller Williams, 2011a; Porter & McQuiller Williams 2011b; Waldner-Haugrud & Magruder, 1995).

Abuse among Deaf and Hard of Hearing College Students

Recently, a few studies have examined IPV among Deaf college students. Two studies of Deaf or hard of hearing college students at a college in Washington, D.C. found varying outcomes. Mason (2010), for example, found psychological abuse to be more prevalent (30%) than physical abuse (11%) in their current relationships among the Deaf or hard of hearing men and women respondents. However, Anderson and Leigh (2011) found in their study of intimate partner violence

involving Deaf and hard of hearing undergraduate women, that psychological abuse was much more prevalent (over 90%) than the women who had been the victim of a physical assault (50%). Porter and McQuiller Williams (2011b) found that in interpersonal relationships, men and women experience similar rates of abuse, which they indicate was consistent with previous research. Porter and McQuiller Williams (2011a) found that men and women who were part of an underrepresented group (which included Deaf and hard of hearing) experienced IPV at similar rates. Porter and McQuiller Williams' (2011a, 2011b) and Mason's (2010) studies included men and women while Anderson and Leigh's (2011) study focused on women. Additionally, in some cases the measures used to determine IPV experiences varied. For example, many studies qualify a single incident as evidence of IPV while Mason (2010) measured IPV as a person being assaulted "at least sometimes". These differences in measures and study participants may account for the discrepancy in rates of IPV reported.

Theoretical Framework

Intergenerational Transmission of Violence/Cycle of Violence

The intergenerational transmission of violence (ITV) hypothesis is frequently used as a framework to examine partner violence. According to the ITV hypothesis, children who are victims of violence more frequently experience violence in their adult relationships (Heyman & Slep, 2002). Studies conducted both in and outside of the United States indicate that children who are exposed to abuse have an increased risk of experiencing partner violence in their own relationships (Cyr,

McDuff, & Wright, 2006; Gover, Kaukinen, & Fox, 2008; Jennings, Park, Tomsich, Gover, & Akers, 2011; Maas, Fleming, Herrenkohl & Catalano, 2010).

Bandura's (1977) Social Learning Theory states that learning occurs through modeled behavior, which is then rewarded or punished. The key concepts of this theory are modeling, observational learning, and reinforcement. In a family institution, behavior is modeled by the parent or guardian, which is then observed by the child. The observations teach the child whether the behavior is appropriate or if there are consequences (Black, Sussman, & Unger, 2010). Studies show that one of the strongest predictors for violence in intimate partner relationships as adults is experiencing violence as children. Experiencing violence as children at home occurs when the child either witnesses the parents or guardians use violence towards each other or the parents or guardians are violent toward the child. Carroll (1977) states people who were physically punished as children to a high degree are more likely to be violent in their adult intimate relationships. If a child is repeatedly exposed to violence in intimate partner relationships in their family, then they learn to view violence as an appropriate response to family stressors.

The World Health Organization (WHO) defines IPV as "behavior within an intimate relationship that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviors" (Krug, et al., 2002, p.89) In one study, a group of IPV providers were interviewed about the cultural differences of providing support to Deaf survivors. One difference that was noted by almost all interviewed is that when looking at the

definition of IPV that Deaf survivors experience everything that their hearing counterparts do but that in addition, there is also the ability to be abusive using communication. This can happen in relationships with two Deaf people or it can be a relationship between a Deaf and hearing person. In this situation whoever has more ability to hear sometimes uses that as a form of control over their partner. This is important to note when surveying the Deaf community.

Several studies have found that for both men and women, parent-to-child physical abuse is associated with becoming a victim of psychological and physical partner violence (Foshee, Benefield, Ennett, Bauman & Suchindran, 2004; Gomez, 2011; Simons, Lin, & Gordon, 1998). Victims of partner violence were more likely to have experienced child abuse compared to those who were not involved in violent relationships (Coffey, Leitenberg, Henning, Bennett & Jankowski, 1996). Child abuse by a parent was significantly correlated to partner victimization for both men and women, according to Marshall and Rose (1988). A meta-analysis conducted by Stith et al. (2000) focused on community and clinical adult populations. That analysis confirmed a small to medium size effect between child physical abuse and being witness to interparental violence, and partner violence in future relationships.

Child maltreatment and partner violence may differ by gender. However, research related to this is mixed. Gover et al. (2008) used a sample of 2,541 college men and women from two southeastern universities, and found a significant relationship between interparental violence and victimization for women, but not

for men. Stith et al. (2000) found that for women the relationship between experiencing child abuse was significantly related to spousal abuse victimization. According to Chen and White (2004) childhood physical abuse was significant for female victimization. There was a strong association between violence during childhood or adolescence and adult IPV victimization for both men and women, with stronger effects found for women victims (Gomez, 2011). In contrast, a study conducted by Fergusson et al.'s (2006) found that there were no significant victimization differences for men and women witnessing violence.

Data Collection and Measures

The purpose of this study was to determine whether data collected indicated significant correlations between auditory status and intimate partner victimization among Deaf or hard of hearing students. The purpose was also to examine if Deaf and hard of hearing students experience and witness family abuse at higher rates than their hearing peers and if that relationship impacts their experiences with partner abuse in college. The cross-sectional data for this study was collected from a northeastern university in the U.S. Thirty-six classes were randomly selected by the researchers. After receiving approval from the Institutional Review Board (IRB), surveys were distributed within the randomly selected classes to all students. Students were informed that the survey was voluntary and they could stop at any time. The survey was distributed in the spring of 2011. A total of 260 respondents completed the survey and we had a response rate of 96%.

Participants

Out of the survey participants, approximately 55% identified as female (n=142), 45% as male (n=117) and one respondent identified as transgender. The majority (56%) of participants identified as White (n=145). The majority of participants (71%) were first (n=87) and second (n=97) year students. Approximately 53% (n=138) of the participants identified as Deaf or hard of hearing. Although 260 surveys were returned, n=235 was used for analysis purposes because 235 respondents filled out each question that corresponded to the dependent and independent variable questions.

Table 1 **Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std.Deviation
Independent Variables					
SocLearnIndex	235	.00	15.00	2.5021	3.37838
ITVIndex	235	.00	8.00	.7617	1.39697
Female	235	.00	1.00	.5574	.49775
Deaf/HH	235	.00	1.00	.5234	.50052
White	235	.00	1.00	.5745	.49548
Year Status	235	1.00	5.00	2.0596	1.00674
Dependent Variables					
CTSPpsychIndex	235	.00	9.00	1.8213	2.40058
CTSPphysIndex	235	.00	18.00	1.7021	3.10717

SASIndex	235	.00	9.00	.5574	1.15095
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Measures

The Social Learning index (SocLearnIndex), Intergenerational Transmission of Violence index (ITVIndex), gender, auditory status, race and college year status are the independent variables. Three childhood maltreatment variables were assessed: experiencing child abuse, witnessing mother-to-father physical violence and witnessing father-to-mother physical violence. The child abuse measure was created from six items from the Parent-Child Conflict Tactics Scale (Straus et al., 1998) to indicate whether a respondent experienced physical abuse at the hands of a parent, caregiver, or guardian. Witnessing inter-parental abuse was measured by asking respondents whether before the age of 18, they had witnessed their mother hit their father and/or witnessed their father hit their mother. Based on the scales described above, the Social Learning index was created by combining the frequencies from the self-reported questions: “You saw your parent/caregiver push, grab, or shove your other parent/other caregiver”, “You saw your parent/caregiver put your other parent/other caregiver down in front of family and/or friends”, “You saw your parent/caregiver beat up your other parent/other caregiver” and “You saw your parent/caregiver choke your other parent/other caregiver”. Students were able to answer never, once or twice, three to ten times, or more than ten times. The responses were coded as: 1=never, 2=once or twice, 3=three to ten times and 4=more than ten times.

The ITV index was created by combining the frequencies from the self-reported questions: “Parent/caregiver threatened you with a gun or a knife”, “Parent/caregiver choked you”, “Parent/caregiver beat you up”, and “Parent/caregiver forced you to have sex (vaginal, anal, or oral intercourse) against your will”. Students were able to answer, never, once or twice, three to ten times, or more than ten times. The responses were coded as: 1=never, 2=once or twice, 3=three to ten times and 4=more than ten times.

Gender was self-reported and coded as a dichotomous variable where 1=female and 0 = male. Auditory status was self-reported with the question: “Which best describes your auditory status?” Students were able to answer, hearing, hard of hearing, or Deaf. Deaf and hard of hearing were combined and coded as 1 and hearing was coded as 0. Race was self-reported with the question: “How do you usually describe yourself?” Race was combined to create a dichotomous variable where 0=non-white and 1=white. College year status was self-reported with the question: “What year are you in school?” Students were able to answer, first year, second year, third year, fourth year, fifth year or more. The responses were coded as: 1=first year, 2=second year, 3=third year, 4=fourth year, 5=fifth year or more.

Conflict Tactics Scale Psychological Index (CTSPsychIndex), Conflict Tactics Scale Physical Index (CTSPphysIndex) and Sexual Experiences Survey Index (SASIndex) are the dependent variables. To arrive at the measures for psychological and physical abuse within the CTSPsychIndex and CTSPphysIndex, Straus et al.’s (1996) Revised Conflict Tactics Scale (CTS2) was used to measure

intimate partner violence by “a partner” over the previous school year. Use of the term “partner” denotes intimate partner violence may exist among heterosexual and same-sex partners. The CTS2 is a commonly used measure of intimate partner violence that measures the frequency with which respondents had experienced psychological and physical abuse from their dating partners. Three items assessed psychological abuse (e.g., insults, and threats) and seven items assessed physical abuse (e.g., slapping, pushing, kicking). Psychometric analyses conducted by Anderson and Leigh (2010) reported sound construct validity between the psychological and physical abuse scales for Deaf and Hard of Hearing college students. CTSPsychIndex was created by combining the self-reported questions: “Partner insulted or swore at you?”, “Partner put you down in front of family and/or friends?”, and “Partner threatened to hit or throw something at you?” CTSPPhysIndex was created by combining the self-reported questions: “Partner pushed, grabbed, or shoved you?”, “Partner slapped you?”, “Partner kicked or bit you?”, “Partner beat you up?”, “Partner hit you or tried to hit you with something?”, “Partner choked you?”, “Partner threatened you with a gun or a knife?”

To arrive at the measures for the SASIndex, participants responded to items based on the Sexual Experiences Survey (SES) (Koss et al., 1987). The SES asks about a variety of sexually-related behaviors including verbal coercion, authority abuse, and acts legally defined as attempted rape and rape. Although the SES (Koss et al., 1987) uses gendered language to indicate penetration with a women and perpetration by a man, acknowledging the importance of gender neutrality for both

victims and perpetrators of sexual assault, the modified version removed all references to gender to account for victimization where either a man or woman could be the victim and accounted for both heterosexual and same-sex encounters. The SASIndex was created by combining the self-reported questions: “Sexual touching against your will?”, “Attempted sexual penetration (vaginal, anal, or oral intercourse) against your will?”, “Sexual penetration (vaginal, anal, or oral intercourse) against your will?” Students were able to answer, never, once or twice, three to ten times, or more than ten times. The responses were coded as: 1=never, 2=once or twice, 3=three to ten times, 4=more than 10 times.

Hypotheses

Research indicates that individuals with a disability are more likely to be victimized than their non-disabled peers. Based on the literature I reviewed above, I would expect that auditory status will be a significant factor in predicting intimate partner victimization. I would also expect that Deaf and hard of hearing students would be victimized at higher rates than their hearing peers based on higher rates of childhood exposure to family violence.

Results

Results outlined in table 2 showed primarily weak correlations between the independent variables with the exception of a moderate correlation between Social Learning and Intergenerational Transmission of Violence. This would suggest that the regression analysis of the dependent variables was not subject to impact by

collinearity. The data in table 3 indicates a weak correlation between auditory status and self-reported psychological ($r=-.122$), physical ($r=-.042$) or sexual abuse ($r=.093$). The correlation between self-reported abuse as a child and self-reported college dating psychological ($r=.378$), physical ($r=.508$) and sexual ($r=.110$) abuse ranged from moderate to weak. The correlation between witnessing aggression between parents/caregivers as a child and self-reported psychological ($r=.446$), physical ($r=.445$) and sexual ($r=.251$) abuse was moderate to weak.

Table 2

Independent Variable Correlations

	SocLearnIndex	ITVIndex	Gender	Auditory Status	Race	Year Status
SocLearnIndex	1	.448	.151	-.027	-.121	.016
ITVIndex	.448	1	.217	-.191	-.114	.130
Gender	.151	.217	1	-.084	-.102	-.057
Auditory Status	-.027	-.191	-.084	1	-.063	-.317
Race	-.121	-.114	-.102	-.063	1	.017
Year Status	.016	.130	-.057	-.317	.017	1

Table 3**Dependent Variable Correlations**

	SocLearnIndex	ITVIndex	Gender	Auditory Status	Race	Year Status
CTSPsychIndex	.446	.378	.210	-.122	-.101	.152
CTSPphysIndex	.445	.508	.202	-.042	-.175	.067
SASIndex	.251	.110	.143	.093	-.114	-.077

Regression models were run to see if the independent variables had any usefulness in predicting psychological, physical, or sexual abuse. The first regression model had self-reported psychological dating violence victimization (CTSPsychIndex) as the dependent variable and the independent variables were: Social Learning index, Intergenerational Transmission of Violence index, gender, auditory status, race, and college year status. The overall regression had significance with a p-value=.000 ($F=13.9$, $df=6$). This indicates that this is a useful regression for predicting psychological abuse as defined by the CTSPsychIndex. The R-Square was .264 indicating that this model predicted 26% variance for the CTSPsychIndex. Looking at the p-value for each individual variable only these three were significant: Social Learning index p-value=.000, Intergenerational Transmission of Violence index p-value=.008 and college year status p-value=.045. The coefficient for SocLearnIndex and CTSPsychIndex was .245 indicating that witnessing aggression between parents/caregivers as a child increased self-reported psychological abuse among college dating relationships. The coefficient for

ITVIndex and CTSPsychIndex was .296, indicating that children who experienced psychological, physical and sexual abuse at the hand of a parent/caregiver increased self-reported psychological abuse in their college dating relationships. The coefficient for college year status and CTSPsychIndex was .287 indicating that self-reported psychological dating abuse increased with college year status.

The second regression model had self-reported physical dating violence victimization (CTSPPhysIndex) as the dependent variable and the independent variables were: Social Learning index, Intergenerational Transmission of Violence index, gender, auditory status, race, and college year status. The overall regression had significance with a p-value=.000 ($F=18.8$, $df=6$). This indicates that this is a useful regression for predicting physical abuse as defined by the CTSPPhysIndex. The R-Square was .329 indicating that this model predicted 33% variance for the CTSPPhysIndex. Looking at the p-value for each individual variable only these two were significant: Social Learning Index p-value=.000 and the Intergenerational Transmission of Violence index p-value=.000. The coefficient for SocLearnIndex and CTSPPhysIndex was .245 indicating that witnessing aggression between parents/caregivers as a child increased self-reported physical abuse among college dating relationships. The coefficient for ITVIndex and CTSPPhysIndex was .815, indicating that children who experienced psychological, physical and sexual abuse at the hand of a parent/caregiver increased self-reported physical abuse in their college dating relationships.

The third regression model had self-reported sexual dating violence victimization (SASIndex) as the dependent variable and the independent variables were: Social Learning index, Intergenerational Transmission of Violence index, gender, auditory status, race, and college year status. The overall regression had significance with a p-value=.001 (F=3.83, df=6). This indicates that this is a useful regression for predicting sexual abuse as defined by the SASIndex. The R-Square was .090 indicating that this model predicted 9% variance for the SASIndex. Looking at the p-value for each individual variable only one was significant: Social Learning index p-value=.001. The coefficient for SocLearnIndex and SASIndex was .082 indicating that witnessing aggression between parents/caregivers as a child increased self-reported sexual abuse among college dating relationships. Table 4 highlights the significant values and coefficients (B) from all three models.

Table 4 Ordinary Least Squares Regression Models Predicting Abuse, N=235

	CTSPsychIndex		CTSPphysIndex		SASIndex	
	p-value	B	p-value	B	p-value	B
SocLearnIndex	.000*	.245	.000*	.245	.001*	.082
ITVIndex	.008*	.296	.000*	.815	.903	-.007
Gender	.056	.537	.233	.416	.131	.225
Auditory Status	.488	-.200	.653	.163	.141	.227
Race	.649	-.125	.135	-.512	.383	-.128
Year Status	.045*	.287	.606	.092	.674	-.032

R ²	.264*	.329*	.09*
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*p-value <.05=significant B=coefficient

Discussion

Based on the research literature and hypotheses developed from prior research, the results were not as expected. Although results from earlier studies were mixed, I would have expected that with a population of college students, auditory status would be a significant factor in predicting intimate partner victimization. I also would have expected that the correlations between witnessing aggression among parents/caregivers (SocLearnIndex) or experiencing abuse from parents/caregivers (ITVIndex) and reporting psychological (CTSPsychIndex), physical (CTSPphysIndex), and sexual abuse (SASIndex) would be stronger than those found here. However, these were consistently significant and useful for understanding college victimization. The one exception was that intergenerational transmission of violence was not related to self-reported sexual victimization. Neither the correlation between auditory status and the social Learning index nor the correlation between auditory status and the Intergenerational Transmission of Violence proved to be significant. This would suggest at least two possibilities: that auditory status does not help us predict childhood exposure to abuse at home and in future dating relationships or the possibility that the research tool itself is impacting the findings. Based on anecdotal and some empirical evidence, it would appear that research tools used in the Deaf community are problematic. As a result, findings in this study should not be generalized at this time. As discussed

previously, limited resources, cultural components, and language dysfluency are significant factors that existing resources identify which impact reporting of abuse among Deaf and hard of hearing people. By developing a research tool that addresses these barriers, more accurate results may be acquired, and improved intervention strategies and resources may result. Implementing research changes requires an understanding of other existing complexities specific to Deaf and hard of hearing populations. The remaining sections of this paper will discuss the challenges with surveying the Deaf community, recommend an approach to future research in the Deaf community and provide an example of a revised research design to improve the current study.

Research Challenges in the Deaf Community

It is very difficult to estimate the population of Deaf ASL users. The practices that the U.S. Census Bureau have used for the last century to enumerate the deaf population are inaccurate. Mitchell, Young, Bachleda, & Karchmer (2005) found that although published research and Internet searches estimate a range of 100,000 to 2,000,000 ASL users, the complexities of being able to calculate such a number make it difficult to estimate with any certainty. This is a problem because identifying populations for research is challenged but would clearly indicate an underserved population.

The need for effective and accurate surveying is important because programs and resources are developed and allocated based on research findings. This is

particularly relevant when conducting research with minority populations. One population that is generally overlooked is the Deaf and hard of hearing population. Specifically, surveys and questionnaires are often used but fail to reflect the linguistic and cultural differences of the Deaf community. This in turn likely impacts the findings of some research done with the Deaf and hard of hearing community. As a result, it is important to develop research methods that reflect the population being studied so that appropriate programs and resources are developed.

When ASL appears on a U.S. Census Bureau form, it is common practice to code it as English (Mitchell, Young, Bachleda, & Karchmer, 2005). “The U.S. Census practice is to code ASL to English when it appears on its forms, so an analysis of ASL use is not possible” (Mitchell, Young, Bachleda, & Karchmer, 2005, p. 23). This presents a challenge as ASL and English are not equivalent. American Sign Language was studied by Linguists and is recognized as a language used predominantly by culturally Deaf Americans. “If one acknowledges the existence of the Deaf community and culture, and further recognizes that this community is, at times, the focus of research, then it is possible to frame at least some deafness research as cross-cultural” (Pollard Jr, 1992, p. 88). Caution must be used in how we define the Deaf community. If they are considered a “vulnerable population” this has the potential to make the assumption that research participants within this population do not have the cognitive ability to ‘participate knowledgeably and freely in research’ (Pollard Jr, 1992).

If we are to take a cross-cultural approach to research with the Deaf community, we must make sure that it is done in a way that does not have a detrimental impact on the community. Lessons can be learned from cross-cultural studies that have not researched the host community enough, resulting in a strained relationship between researcher and host community. At times this relationship is severed and the host community no longer allows outsiders in. Clearly in those situations, further research would be significantly limited.

Pollard (1992) summarizes formal ethical principles of cross-cultural research practices used to protect the host community. Without these ethical principles being the basis of our research we run the risk that the research design will not fit the community we are studying therefore potentially rendering the results as erroneous. The ethical principles are as follows:

1. There must be formal channels of communication between the visiting researchers and the host community's political and scientific bodies.
2. Through these communication channels, the perspectives of the researchers and the host community are shared as they relate to all aspects of the research endeavor. Particular attention is focused on: (a) the researchers' interests and the concordance of the research agenda with the host community's interests and needs, (b) the purpose and methodology of specific research projects and their appropriateness in the cross-cultural setting, (c) the risks and benefits of the proposed studies (for the community as well as for individual participants), (d) the implementation of informed consent and other safeguards, and (e) the manner in which the research results will be communicated to the professional and lay public.
3. The research agenda, design, activity, and reports cannot be harmful or inappropriate from the perspective of the host community or the researchers. In fact, the research must benefit the host community in ways that are recognized and valued by that community, not just by the researchers.

4. The research collaboration must foster the skills and self-sufficiency of host community scientists. To the greatest degree possible, it should be conducted by them, on an equal-status basis with the visiting researchers (90).

It is critical to collaborate with the Deaf community when wanting to conduct research that impacts the community at large. The concept of community-based participatory research (CBPR) is an example model to use when working with the Deaf community.

Recommendations

Two approaches can be used when determining which survey tool to use with the Deaf community. One approach is to have the survey translated. The second approach is to develop a tool from scratch. An advantage to the latter approach is that the language and culture can be taken into consideration while in the process of developing the tool instead of finding a way to make it retroactively fit via translation.

Pollard Jr, Dean, O’Hearn, and Haynes (2009) assert that translation alone is not enough without taking into consideration the differences in “funds of information” between hearing and Deaf people. The process suggested involves fourteen steps, beginning with selecting a source material. The material is then broken into key learning points and prioritized. This process is done with the approval and close consultation of the source material creator. The next step is developing a dialogic story based on the learning points which is acted out by Deaf actors. After this, fund of information (information that hearing people typically

have as a result of being able to hear and learn from the environment without being directly taught) edits take place where information is added into the dialogue that Deaf people potentially are not aware of due to the lack of incidental learning (learning that occurs indirectly) throughout their lives (Hopper, 2011). Edits are also made to make sure that the information and examples given are relevant to Deaf people’s lives. A first English script is created and then shared with the source material creator to make sure that it aligns with the original intent of the tool being translated. The end result is a transcript of the translated material, presented with the signed version, in order to provide material that is equally accessible to people regardless of auditory status. The specific steps are outlined in the chart below:



Figure 1: (Pollard Jr, Dean, O’Hearn, and Haynes, 2009)

As a potential example, an all-encompassing survey when asking about abuse, will cover physical, sexual, and psychological abuse by giving examples. Depending on how the survey is administered this can be accomplished in different ways. If the survey tool is translated, the translation should incorporate an explanation of the what is meant by “abuse”, in order to include forms of abuse (emotional, psychological, sexual, communication) that would not automatically be understood through American Sign Language. American Sign Language does not have one sign that captures the various forms of abuse, which may otherwise be assumed in English. If an American Sign Language/English interpreter is used, then they would need to be informed about what the researcher is trying to capture because more than likely each interpreter will interpret ‘abuse’ in several different ways. This will help to capture a group of Deaf people who are potentially being abused but do not even realize it and therefore do not report it or seek help (Cerulli et al., 2015). There are a small number of research studies that have been conducted that reflect this model for data collection, and which are recommended to potentially improve the accuracy of results for this study.

Revised Research Design

The design for the revised study would be similar to the method used by The Rochester Prevention Research Center: National Center for Deaf Health Research (NCDHR). Pollard, Sutter & Cerulli (2013) outline the method used by the NCDHR, and the Center’s purpose of examining the effectiveness of research methods involving the Deaf community. One project implemented by NCDHR was the

health risk behavior survey (named the Deaf Health Survey or DHS). This survey was offered to deaf respondents in American Sign Language (ASL), manually coded English (MCE) and written English via an interactive touch-screen computer interface to make sure that it was fully accessible for the population being studied. Manually coded English is using signs borrowed from American Sign Language but presenting them in an English grammatical word order whereas ASL has its own grammatical structure that is very different from English. Respondents were able to view film clips of instructions, questions, and answer choices in ASL, MCE, and/or written English. The respondents were presented options of communication modality and were able to switch between modalities for the duration of the survey. For the ASL and MCE video clips, the respondents were able to choose between six signers, who were all signing the same content, in order to find a communication style that best matched their own.

For my research design I would survey a sample of students in the college of the National Technical Institute for the Deaf (NTID), deaf students who are cross-registered, and hearing students who are part of classes with cross-registered deaf students. A cross registered student is defined as a deaf student who is taking courses under one of the other colleges at the Rochester Institute of Technology (RIT) besides NTID. The goal is to receive 400 completed surveys that are representative of the RIT student body. In order to achieve this Independent Review Board (IRB) approval will be required to make sure no harm will be done with the survey. The instructions will also include that the survey is approved

through the IRB, voluntary, and should not cause harm but will outline services that are available should the topic matter cause distress. Currently, there are approximately 18,000 students that attend RIT (www.rit.edu, 2016) and out of that 18,000 approximately 1,700 are Deaf or hard of hearing (www.ntid.rit.edu, 2016). Because the surveys will be sent to NTID or cross-registered classes, it is expected that the representation of deaf or hard of hearing students among survey respondents would be greater than the roughly 9% of the general RIT student population that they make up. This is an effective convenience sampling due to the researcher's affiliation with the school and the ability to gain access to resources necessary to conduct the research. I would use a computerized survey similar to NCDHR's and distribute it in a similar fashion to the Student Ratings of Teaching Effectiveness (SRATE). Currently when a student logs in to fill out a survey about the effectiveness of their professors, there is a link that allows you to view the survey in ASL or in English. I would inquire about receiving permission to use the SRATE system because students are already familiar with it. Although this study will survey the student body, the individual students are the units of analysis. The study will be cross-sectional because the survey is assessing lifetime prevalence of victimization up to the point of the survey so a longitudinal approach is not appropriate for this situation. By surveying from a broad student population through a voluntary self-report instrument, randomization of this cross-sectional approach should be optimized.

Demographic information including: gender, race/ethnicity, year in school, auditory status, and sexual identity will be gathered including information on each respondent. Modified survey questions based on the Sexual Experiences Survey (SES), Revised Conflict Tactic Scale (CTS2) and the Parent-Child Conflict Tactic Scale that address various experiences related to IPV will be used and rated on a four-point scale indicating the frequency of experiences (i.e. “never”, “once or twice”, “three to ten times”, “more than ten times”).

For this study, permission would also need to be received from the heads of each College that will have students participating in the survey. The RIT and NTID counseling center should also be made aware of the survey in the event they receive traffic due to someone taking the survey. The survey results and information gathered will be shared with the colleges impacted, the counseling centers, residence life, and public safety to inform their programming.

Translation Process

The translation process model developed by Pollard Jr., Dean, O’Hearn, and Haynes (2009) would be utilized to potentially improve accuracy of research results. Although I am unable to give a specific example of the entire process, a general overview of this translation process can be provided through use of an example focusing on the experience of “abuse”. Typically, the sign used to indicate “abuse” would be of a person being beat up. In other situations, the word is finger spelled “a-b-u-s-e”, and is generic or non-specific in meaning. The translation process model would instead take the word “abuse” and explain the various types of abuse (i.e.

psychological, physical, and sexual). The dialogic story, fund of information edits, and Deaf culture content are extremely important steps in the process of assuring an understanding of the meaning of information being presented. Creating a dialogic story takes into account the Deaf audience's fund of information and their culture. For example, when "abuse" is discussed, a dialogic story presenting the different examples of abuse through character portrayal by Deaf or hard of hearing individuals would help to improve comprehension by their peers. The script for this story would include material to explain or clarify information gaps that are commonplace in the Deaf community, but that are otherwise assumed or understood by hearing counterparts. For example, the concept of psychological abuse in the Deaf community may include barriers to access to communication or use of verbal or signed communication skills by a partner to the detriment of the Deaf or hard of hearing person. Deaf cultural content is included in the dialogic story as well, reflecting the unique experiences of Deaf or hard of hearing individuals, and connecting those experiences with more clearly defined concepts of "abuse". As a result, this translation process model addresses limitations of standard research methods, which assume understanding regardless of hearing status.

Research Design Challenges

As discussed in the research design section RIT/NTID has approximately 1700 deaf students which makes it and the city of Rochester unique because of the large deaf community. Anecdotal evidence has always suggested that Rochester has

the largest deaf population per capita but it was never evidence based because the census did not ask about deafness until recently. Using data from the American Community Survey, conducted by the U.S. Bureau of the Census researchers Walter & Dirmyer (2012) were able to confirm with some certainty that Rochester has the largest deaf and hard of hearing population per capita among those ages 18 to 64. Although other cities potentially have more deaf people per capita, many fall into the 65 and older category and fall under the description of medically deaf instead of culturally Deaf. Because Rochester is unique, this means that the ability to replicate this study in another area would be a challenge.

For the computerized survey gathering a proficient group to do the translation is a challenge. Graybill et al. (2010) outlined a rigorous procedure to ensure meaning equivalence when translating between the source wording and the ASL translation. There are many concepts used in fields such as Criminal Justice that do not have a one sign ASL equivalent. Translation frequently requires specifying certain terms used in English that are not typically well communicated in ASL. ASL translations of English “categorization” terms such as “abuse” often require specific descriptions of behaviors due to limitations in English literacy and “fund of information” (O’Hearn & Pollard, 2008; Pollard, 1998; Graybill et al., 2010). As a result, terms such as “abuse” will be used in this survey but ASL and MCE translations will be depicted with specific descriptions of behaviors of victimization. All translated survey items will be back-translated by a person independent of the translation team in order to have content validity.

Using self-report data to inform research also has its challenges. Although the survey will be confidential it will not be anonymous because in order to take the survey, the student will log in with their university credentials. This leaves the potential for the respondent not to be truthful because the survey is dealing with a sensitive topic. Even if taking the survey in a private area, the respondent may decide to abandon the survey or only answer certain questions, which will impact statistical results.

The operationalization of auditory status is debatable because by allowing people to self-identify if they are “Deaf”, “hard of hearing”, or “hearing” leaves room for interpretation by the respondent if not using the medical model of having hearing at a certain decibel level. The hope is that a relatively large sample size of at least 400 respondents will minimize the impact that this may have.

Conclusion

This study was conducted to determine whether significant correlations exist between a person’s auditory status and rates of victimization, and to determine whether Deaf and hard of hearing students were victimized at higher rates than hearing peers based on higher rates of exposure to family violence as children. The research findings did not show significant correlations between either auditory status and victimization, or related to victimization of Deaf or hard of hearing and childhood exposure to violence. Previous research on IPV in general and among Deaf and hard of hearing individuals yielded mixed results, which leads to questions about how data is collected and whether the findings are impacted as a

result. Further research on issues of IPV among Deaf and hard of hearing populations is warranted, and may be improved by implementing modifications of the research methods initially used here, such as a translation process model.

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