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Measuring Polyvictimization Among Vulnerable Children: A Confirmatory Factor Analysis

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MEASURING POLYVICTIMIZATION AMONG VULNERABLE CHILDREN: A

CONFIRMATORY FACTOR ANALYSIS

by

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ABSTRACT

MEASURING POLYVICTIMIZATION AMONG CHILDREN IN FRAGILE
FAMILIES: A CONFIRMATORY FACTOR ANALYSIS

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The purpose of this study was to test the pathways to polyvictimization model, a conceptual model developed by Dr. David Finkelhor, as an accurate measure of victimization among children in fragile families.

Polyvictimization is the simultaneous, accumulative exposure to multiple forms of victimization. Finkelhor's pathways to polyvictimization model consisted of four hypothesized pathways to becoming polyvictimized. The four pathways include a) residing in a dangerous community, b) living in a dangerous family, c) having a chaotic, multi-problem family environment, and d) the child has emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself. While researching the pathways it was decided that seven victimization types from the Juvenile Victimization Questionnaire - the questionnaire from which the pathways to polyvictimization were developed – needed to be included in the hypothesized polyvictimization measurement model.

This study used a correlational research design that utilized data from the Fragile Families and Child Wellbeing Study, a national, longitudinal research study that examined the possible consequences of childbearing outside of marriage. The Social-Ecological Model was used as the framework for this study.

Using Confirmatory Factor Analysis (CFA), the 11-factor hypothesized polyvictimization measurement model was tested to see if it could accurately assess victimization among children. CFA was also used to identify the strongest indicators of victimization in the model and to identify if the four hypothesized pathways to polyvictimization were able to predict the seven victimization types.

Results found that the hypothesized polyvictimization measurement model is an accurate measure to assess victimization among children. Strong indicators of victimization were identified and strong correlation and predictor measures were discovered.

Polyvictimization often goes undetected and persists over long periods of time. Children who experience polyvictimization need to be identified because they are at particularly high risk of additional victimization and traumatic psychological effects. Nurses and other health care professionals need to be able to identify children on the path to polyvictimization or those children who are polyvictimized so that they might be able to direct prevention resources to these children and their families to prevent vulnerable children from becoming polyvictimized.

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ACKNOWLEDGMENTS

Kelli J. Jones MSN, RN

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CHAPTER 1: INTRODUCTION

The victimization of children is a persistent public health problem that has received an extensive amount of attention in recent years (Barnes, Howell, & Miller-Graff, 2016; Finkelhor & Dziuba-Leatherman, 1994; Finkelhor, Ormrod, Turner, & Hamby, 2005). Bullying (including cyber-bullying), emotional abuse, physical abuse, sexual abuse, neglect, exposure to domestic violence, dating violence, hate crimes, online victimization and gang violence are just a few ways that children are victimized (Hamby, Taylor, Jones, Mitchell, Turner & Newlin, 2018).

Many children and adolescents experience multiple forms of victimization over their lifetime (i.e. physical assault, child maltreatment, peer or sibling victimization, indirect victimization, sexual victimization, etc.). These multiple forms of victimization have been described as polyvictimization. In 2005, Dr. David Finkelhor, an American sociologist and his team of researchers coined the definition of polyvictimization as 'the experiencing of four or more different types of victimization in different incidents in a given year' (Finkelhor, et al. 2005; Finkelhor, Ormrod and Turner, 2007; Barnes et al., 2016).

The occurrence of polyvictimization - the multiple forms of victimization that children and adolescents experience - needs to be examined across the stages of development (Finkelhor, Ormrod &Turner, 2009a; Finkelhor & Ormrod, 2010). This examination of polyvictimization across the stages of development ensures that assessments completed by health care providers are not limited to singular, isolated incidents of victimization (Wolfe, 2018).

In recent years, efforts have been made to capture a complete profile of multiple forms of victimization that children and adolescents may experience (Leffler & Spivak, 2018). According to Finkelhor, the threshold for polyvictimization established early in the conceptualization of the phenomenon was set at four or more different kinds of victimization in a single year during childhood/adolescence (Finkelhor et al., 2007).

Because those who have experienced polyvictimization have been found to have more symptoms of trauma than children with recurrent episodes of one kind of victimization (Finkelhor et al., 2007), the identification and focus on polyvictimization will help to expose a very important subgroup of victimized children; those children with the highest burden of victimization that also exhibit more trauma symptomatology.

Documentation of Need for Study

Assessing polyvictimization, rather than single episodes of violence is critically necessary for many reasons. When episodes of violence and types of victimization are studied in isolation, nurses and other health care providers may fail to completely comprehend how and why the victimization is occurring. This limits the effectiveness of interventions because the focus of those interventions may only address one form of victimization (Barnes et al., 2016).

Pathways to Polyvictimization

Finkelhor and his team proposed a conceptual model of polyvictimization that consisted of four distinct pathways of polyvictimization (Finkelhor, Ormrod, Turner, & Holt, 2009). The proposed pathways include:

1. Residing in a dangerous community

2. Living in a dangerous family

3. Having a having a chaotic, multi-problem family environment

4. The child has emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself

Juvenile Victimization Questionnaire

These pathways were conceptualized using results from the Juvenile Victimization Questionnaire (JVQ), which is a questionnaire that was developed as a comprehensive, developmental approach to assess crime, child maltreatment, and other kinds of victimization experiences during childhood (Hamby & Finkelhor, 2000). The JVQ includes 34 different types of victimization that cover several areas of concern including Conventional Crime, Child Maltreatment, Peer and Sibling Victimization, Sexual Victimization, and Witnessing Victimization/Indirect Victimization (Hamby & Finkelhor; Finkelhor et al., 2004).

The JVQ was originally designed to meet certain needs that had not been met by other available instruments (Hamby & Finkelhor, 2000). The current study will test the hypothesized polyvictimization measurement model to see if this model is an accurate measure of victimization in children and adolescents.

Seven Victimization Types

Additionally, after comparing the pathways to polyvictimization characteristics to the victimization types in the JVQ, the decision was made to include seven of the 34 victimization types in the hypothesized polyvictimization measurement model. The seven victimization types are:

1. Psychological/emotional abuse during the home visit

2. Psychological/emotional and physical abuse

3. Witness to domestic violence

4. Neglect

5. Witness to Assault with and without a weapon

6. Bullying, emotional bullying, and theft

7. Assault with no weapon

This hypothesized polyvictimization measurement model will be tested using interview data collected from the study participants of Princeton and Columbia University's Fragile Families and Child Wellbeing Study which is a national, long-term study of the consequences of childbearing outside marriage (Reichman, Teitler, Garfinkel, & McLanahan, 2001).

The Fragile Families and Child Wellbeing Study has followed approximately 4,700 children and their families for 15 years. The current study will utilize interview data for 3,427 children and their parents or primary caregivers (PCGs) from the Year 15 data wave. These participants have completed follow-up interviews that included data from both the child and their PCG. The interviews that included data from only the child or only the PCG were not included in the current study.

Purpose of the Study

The purpose of this study is to 1) test the hypothesized polyvictimization measurement model and the seven victimization types as an accurate measurement model for polyvictimization; 2) identify which items have the strongest factor loadings for each of the eleven factors; 3) identify the relationships between each pathway and

victimization type, and 4) identify if the four pathways to polyvictimization are predictors of the seven victimization types.

There is abundant research on the victimization of children but research on multiple victimizations – polyvictimization - is less abundant. Establishing the four pathways to polyvictimization and the seven victimization types are an accurate measurement model of victimization will help to identify and bring attention to polyvictimized children, who are more prone to have extremely high levels of psychological distress and trauma symptomatology (Finkelhor et al., 2007; Finkelhor et al., 2009b). The focus of identifying the four pathways to polyvictimization and the seven victimization types as an accurate measurement model also draws attention to the intersection of different kinds of victimization and will help alleviate fragmentation in the study of child victimization which in the past has meant singling out different types of victimization like bullying, sexual abuse, sexual harassment or exposure to domestic violence (Finkelhor et al., 2009).

The identification of an accurate victimization measurement model could also help to correct for possibly misleading conclusions about victimization which may pay attention to limited forms of victimization and that do not account for co-occurring victimization or polyvictimization. It may also help to identify that "what accounts for the high levels of distress in polyvictimized children is their vulnerability to victimization across several contexts and a number of different relationships" (Finkelhor, 2008; Finkelhor et al., 2009b).

Statement of the Significance of the Problem to Nursing

Polyvictimization often goes undetected and persists over long periods of time (Finkelhor et al., 2009b). Children who experience polyvictimization need to be identified because they are at particularly high risk of additional victimization and traumatic psychological effects. Nurses and other health care professionals need to be able to identify children on the path to polyvictimization or those children who are polyvictimized so that they can direct prevention resources to these children and their families to prevent vulnerable children from becoming polyvictimized. This study hopes to identify the characteristics of victimization in children who are polyvictimized in order to establish effective, efficient, and comprehensive assessment tools and strategies that can be utilized by nurses and other health care professionals in acute, clinical and community health settings.

Studying the extent to which children are exposed to victimizing events is important to fully understand the effect of such exposure in shaping them as adults. A greater awareness of the impact of these victimizing events on children and adolescents is important as a basis for providing a safer environment and establishing better interventions, especially for those that have been victimized on multiple occasions (Aho, Gren-Landell, & Svedin, 2016).

It is imperative that nurses are familiar with the socioeconomic, psychosocial, community and societal barriers that those who have experienced polyvictimization may face in everyday life. Utilizing the four pathways to polyvictimization and the seven victimization types as an accurate measure for victimization will help to identify those barriers. Socioeconomic, psychosocial, community and societal pressures challenge

those children and youth who experience polyvictimization. This multitude of pressures includes poverty, racism, physical and emotional abuse, and other adversities. Strategies to efficiently and effectively provide care for these vulnerable groups of children are desperately needed.

The conditions and environments in which people are born, grow, live and learn play a role in increasing or decreasing one's risk of becoming polyvictimized (WHO Commission on Social Determinants of Health, 2008; Healthy People 2020, 2008). It is imperative that nurses gain the competence needed to comprehensively assess and fully understand challenging circumstances and tackle the issues that contribute to polyvictimization.

It cannot be emphasized enough how important it is for nurses and other practitioners to appreciate the breadth and variety of victimizations a child has experienced in order to recognize less visible problem areas in favor of some other more visible problem areas. Identifying the four pathways to polyvictimization and the seven victimization types as an accurate measure for identifying victimization and implementing a protocol that utilizes this measure will assist nurses and other health care providers in adopting a more accurate and comprehensive assessment of risk factors for polyvictimization.

CHAPTER II: **REVIEW OF THE LITERATURE**

This chapter begins with discussion of the theoretical framework, the conceptual framework and the philosophical underpinnings that guided this study. This is followed by the comprehensive literature review. The chapter concludes with the research questions that will be tested and a summary of the gaps in the literature and how the author intends to address those gaps with the current study.

Theoretical Framework

Upon careful review and consideration of applicable models and theories, the Social-Ecological Model (Bronfenbrenner, 1986) was selected as the most useful theoretical framework to apply to the polyvictimization of children and youth because of its applicability to complex problems. This model was used by the Centers of Disease Control and Prevention to explain violence and prevention strategies and takes into consideration the various risk factors and norms of individual children and youth as well as social and economic systems that create conditions for abuse to occur (CDC, 2009; Teaster, 2017).

The model uses a multi-level systems approach for considering the mistreatment of children and consists of micro and macro system levels. The model also places the victim at the center, which is consistent with applying a patient-centered or in the case of polyvictimization, victim-centered approach to intervention with victims of polyvictimization.

The premise of the Social-Ecological Model as applied to polyvictimization is that children and youth are embedded in a series of environmental systems that interact

with one another and with the individual to influence all types of human development.

Figure 1 shows a model that consists of four overlapping circles that focus on the

characteristics of the victimized child and four influencing systems: the microsystem, the

mesosystem, the exosystem, and the macrosystem (Bronfenbrenner, 1986; CDC, 2009;

Teaster, 2017). The overlapping circles in the model illustrate how factors at one level

influence factors in another level (CDC, 2009).
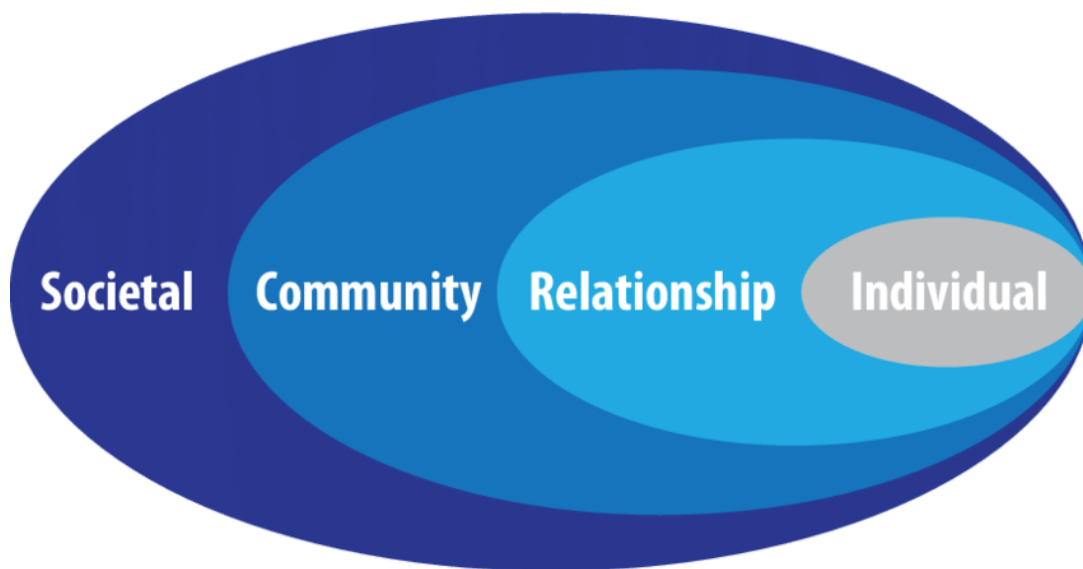
Figure 1: Brofenbrenner's Social-Ecological Model

The microsystem is the individual victim within his or her environment and

considers individual factors including biology and personal history that increase the

likelihood of becoming a victim of violence. These factors include age, education,

income, behavior, substance use and history of abuse. The mesosystem consists of the

close relationships that individuals have developed. Characteristics of these relationships

may increase or decrease children's risks for polyvictimization. They may also be

sources of victimization (i.e. emotional abuse by a parent) or may be sources for support and relief from victimization. This could include family members, caregivers, peers and partners.

The exosystem is the environments that are external to the victimized child and includes a variety of settings including schools, community services, law enforcement, workplaces and neighborhoods in which social relationships occur. The macrosystem of the Social-Ecological model includes broad societal values, norms, and cultural and institutional patterns that help to create and support a climate in which violence is either encouraged or inhibited (Bronfenbrenner, 1986; Teaster, 2017).

The Socio-Ecological Model facilitates the recognition that polyvictimization among children is a multifaceted problem requiring clear understanding as well as coordinated responses from multiple levels of intervention. It is also a framework that highlights the multiple levels of environmental systems in which these children are victimized. This study tests the hypothesis that the 11-factor model that includes the four pathways to polyvictimization and the seven victimization types is an accurate measure for multiple levels of victimization. This concept fits closely with the Socio-Ecological Model.

Conceptual Framework

The Pathways to Polyvictimization is a part of the conceptual framework for this research study. Some children experience very high levels of victimizations of different types. In the article *Pathways to Polyvictimization* (2009), Finkelhor and his team introduced a conceptual model that suggested that there were four distinct pathways to becoming polyvictimized. The team felt that if researchers and practitioners could

effectively identify the children on the *path* to becoming polyvictimized, they might be able to focus their prevention efforts on decreasing the risk of polyvictimization and the negative physical, mental and social health outcomes that affects these children (Finkelhor et al., 2009).

The conceptualized pathways to polyvictimization were derived from indicators that were selected from data available from results of the Developmental Victimization Survey (DVS), which is a 3-wave longitudinal study of a representative sample of U.S. children and adolescents designed to obtain incidence estimates of a comprehensive range of childhood victimization across gender, race and developmental stage (Finkelhor et al., 2009a). Data for the DVS was obtained using the aforementioned Juvenile Victimization Questionnaire (Hamby and Finkelhor, 2000). The Juvenile Victimization Questionnaire (JVQ) screens for 34 specified victimization types.

All four hypothesized pathways showed significant independent association with the onset of polyvictimization (Finkelhor et al., 2009). The hypothesized pathways associated with the onset of polyvictimization were evaluated through multiple logistic regressions, with models assessing all four-pathway measures simultaneously. The models were based on comparisons between children who have experienced polyvictimization and children who have not experienced polyvictimization (Finkelhor et al., 2009).

The exploratory findings from a national survey of children supported that four distinct pathways may predispose children to become the targets of multiple kinds of victimization. The claim was made that the four pathways made an independent

contribution to the onset of polyvictimization (Finkelhor et al., 2009). The four

hypothesized pathways are described in detail below.

Polyvictimization Pathway One: Residing in a Dangerous Community

The dangerous community score was derived from four possible indicators that

were surveyed in different waves of the DVS. The indicators included: school violence

problem, neighborhood violence problem, moved to worse neighborhood, and residence

in large city (Finkelhor et al., 2009). Turner, Shattuck, Hamby, & Finkelhor (2013) used

'community disorder' to define neighborhood environments that inform residents with

observable signs (rundown buildings, graffiti, litter, public drinking and drug use,

vandalism, and evidence of crime) that social control is weak and that there is little

concern or ability to maintain a safe and orderly physical environment (Geis & Ross,

1998; Kim & Conley, 2011).

The researchers concluded from their research that stress exposure, especially

exposure to multiple forms of violence and victimization, represent an especially

powerful predictor of youth mental health and one that may largely explain the

significance of community disorder (Turner et al., 2013; Geis & Ross, 1998; Kim &

Conley, 2011). All of the families in the Fragile Families and Child Wellbeing data set

live in large cities (Table 1) and questions in the data set included information about

neighborhood violence as well as school violence (Reichman et al., 2001).

Table 1: Fragile Families and Child Wellbeing Study Cities and Sample Sizes			
Oakland, CA: N=330*	Philadelphia, PA: N=337	New York, NY: N=384	Jacksonville, FL: N=100
Austin, TX: N=326	Richmond, VA: N=327	San Jose, CA: N=326*	Toledo, OH: N=101
Baltimore, MD: N=338	Corpus Christi, TX: N=331	Boston, MA: N=99	San Antonio, TX: N=100
Detroit, MI: N=327*	Indianapolis, IN: N=325	Nashville, TN: N=102	Pittsburgh, PA: N=100
Newark, NJ: N=342*	Milwaukee, WI: N=348	Chicago, IL: N=155	Norfolk, VA: N=99

*Newark, Oakland, Detroit, and San Jose were strategically selected due to funder interest, and therefore are not part of the FFCWS "national sample".

Polyvictimization Pathway Two: Living in a Dangerous Family

The dangerous family score was constructed from four detailed indicators: witnessed family violence (which included whether the child had witnessed domestic/intimate partner violence or had witnessed the physical abuse and/or maltreatment of a sibling), parents/caregivers always arguing, frequent parent-child arguments, and any maltreatment (which included physical abuse, the abuse, neglect, or custody violation; Finkelhor et al., 2009). The Fragile Families and Child Wellbeing data set includes questions about physical and emotional and other maltreatment.

Polyvictimization Pathway Three: Having a Chaotic, Multi-Problem Family Environment

The family problems score included twelve indicators of possible stresses or disruptions within a child's household within the past year. These indicators included homelessness, job loss, unemployment, or parent moving to a worse job, financial problems, having a parent or caregiver in prison, family drug or alcohol problems, parents/caregivers that are separated or divorced, financial problems, parent/caregiver

loss of driver's license, when the family had to go on public assistance and when the family was forced off public assistance (Finkelhor et al., 2009). The Fragile Families and Child Wellbeing data set includes questions that relate to many of the stressors indicated in Pathway Three.

Polyvictimization Pathway Four: Child Has Emotional or Behavioral Problems That Increase Risk Behavior, Engender Antagonism, and Compromise the Capacity to Protect Oneself

The study cited in the *Pathways to Polyvictimization* (Finkelhor, 2009) did not include a true measure of enduring behavioral patterns of temperament so the researchers utilized a measure of children's symptomatic behaviors that could reflect temperament or early emotional dysregulation. The measure was labeled as the child symptom score, which included the anger, depression, and anxiety scales of the Trauma Symptoms Checklist for Children (TSCC; Briere, 1996), which was used with 10-17-year-old interviews and the Trauma Symptom Checklist for Young Children (TSCYC; Briere, Johnson, Bissada, Damon, Crouch, Gil, Hanson, & Ernst, 2001). The Fragile Families and Child Wellbeing data set includes questions that look at anger, depression and anxiety.

Victimization Types from the Juvenile Victimization

The conceptual framework also includes the seven victimization types pulled from the Juvenile Victimization Questionnaire, which consists of 34 victimization types. The seven victimization types are: psychological/emotional abuse during home visit, Psychological/emotional and physical abuse, Witness to domestic violence, Neglect, Witness to Assault with and without a weapon, bullying, emotional bullying, and theft

and, Assault with no weapon. The descriptors that define each of the seven victimization types is outlined the Presentation of the Data section in Chapter IV.

Philosophical Underpinnings

Philosophical underpinnings are the foundations and support that influence nursing research, which aids in discovering the truth about the discipline and other phenomena. This foundation includes various paradigms that are defined as "the basic belief system or worldview that guides the nurse investigator, not only in choices of method but in ontologically and epistemologically fundamental ways" (Guba & Lincoln, 1994, p.105).

Ontology is the study of being; what constitutes reality (Scotland, 2012). Researchers perceive how things really are or how they really work; these perceptions will differ with each researcher. Epistemology is concerned with "how knowledge can be created, acquired and communicated" and is concerned with "what the nature of the relationship is and what can be known" (Scotland, 2012, p. 9; Guba and Lincoln, 1994, p. 108).

This research study is an analysis of secondary data from interviews of children and their families and seeks knowledge about the nature of the relationship between victimization and the theorized model of the Pathways to Polyvictimization. The postpositivist paradigm is a rational choice and will provide the philosophical foundation for this study.

Research in the postpositivist paradigm challenges the positivist emphasis of absolute truth of knowledge. Postpositivism takes into consideration that knowledge is speculative or hypothetical and discovery of absolute truth is not possible because one

cannot be absolute about claims of knowledge when studying the behavior and actions of humans (Creswell, 2009). Like positivism, postpositivism contains well-defined concepts and variables, precise instrumentation and empirical testing (Guba & Lincoln, 1994) but it recognizes that reality is subjective, mentally constructed and contains multiple aspects (Creswell, 2009).

The postpositivist paradigm also points out that observations cannot always be relied upon as they can be subjected to error. The postpositivist paradigm also assumes that scientists are never objective and are biased due to their cultural beliefs, personal biases, background, assumptions and values. These personal characteristics of the researcher can affect the research outcome, which means that pure objectivity cannot be achieved (Denzin & Lincoln, 2000; Creswell, 2009).

In the postpositivist paradigm, knowledge is sought through identifying and assessing the causes that influence outcomes. The problems studied by postpositivists reflect the need to identify and assess the causes that influence outcomes. The postpositivist paradigm is also diminutive in that the intent is to reduce the ideas into a small, discrete set of ideas to test. The postpositivist begins with a theory, collects data that either supports or refutes the theory, and then makes necessary revisions before additional tests are made (Creswell, 2009).

The postpositivist paradigm is judged appropriate for the study of nursing questions that require systematically gathered and analyzed data from representative samples, technical clinical knowledge about specific interventions and predictive theories for at-risk individuals and populations (Denzin & Lincoln, 2000; Creswell, 2009). The current study utilizes a representative sample of at-risk individuals and will provide

"data, evidence, and rational considerations" (Creswell, 2009) that will shape knowledge about the conceptual model of the pathways to polyvictimization as an accurate measure for identifying victimization of at-risk children and youth. Therefore, the postpositivist paradigm is an appropriate choice for this research.

<div align="center">**Comprehensive Review of the Literature**</div>

This comprehensive literature review begins with a brief overview of child victimization and continues with an introduction to the concept of polyvictimization, the risk factors associated with polyvictimization, the prevalence of polyvictimization, the effects of polyvictimization, as well as the consequences of polyvictimization.

Child Victimization

Most of the literature on child maltreatment and victimization focuses on separate, narrow categories of experiences, such as sexual abuse, physical abuse, bullying, or dating violence (Finkelhor, Ormrod, & Turner, 2007). Of the 3.4 million children who were the subject of a child protective services investigation or alternative response in Fiscal Year 2016, a national estimate of 676,000 children were found to be victims of abuse and neglect. Approximately 75% of these victims were neglected, 18.2 percent were physically abused, and 8.5 percent were sexually abused. Additionally, in 2016, a nationally estimated 1,750 children died of abuse and neglect at a rate of 2.36 per 100,000 children in the national population (U.S. Department of Health and Human Services, 2018). These aforementioned statistics are staggering, but even more alarming is the fact that many children who suffer from one form of victimization also suffer from other forms of victimization simultaneously (Sanders, 2003; Finkelhor et al., 2007). The

sheer frequency of victimizations in childhood suggests some of these victimizations must overlap. Additionally, many of these child victims seem to have common risk factors, including family instability and family substance abuse (Nishina & Juvonen, 2005; Finkelhor et al., 2007).

Adverse Childhood Experiences. Many studies address child maltreatment, especially as the concept of assessing adverse childhood experiences (ACEs) has become more common in health care (Girouard and Bailey, 2017). However, studies of children rarely assess the intersection of a much broader range of victimization. Like polyvictimization, the concept of ACEs emphasizes the cumulative effects of trauma but polyvictimization also emphasizes the "importance of 'everyday trauma' - the bullying, verbal aggression, and minor physical assaults that all impact children's wellbeing just as much as full-scale disasters do" (Hamby, Taylor, Jones, Mitchell, Turner, and Newlin, 2018).

Web of Violence. Polyvictimization emphasizes interpersonal violence, not natural disasters or other unintentional adversities. The researchers who developed the concept of polyvictimization recognized that "other bad events, ranging from floods to unemployment, can cause huge disturbances for individuals and families, but their emphasis has been on the violations of social norms, the betrayals of interpersonal trust, and the intentional maliciousness of violence that children and adolescents face" (Hamby, Taylor, Jones, Mitchell, Turner, and Newlin, 2018). Figure 2 shows the web of interconnected violence that children, adolescents, adults and elders can experience (Hamby and Grych, 2013; Hamby, Taylor, Jones, Mitchell, Turner, & Newlin, 2018).

Studies may focus on categories like family victimization, school victimization, or exposure to neighborhood violence (Finkelhor et al., 2007) but it is important to examine categories of victimization that occur simultaneously and in multiple forms, not just assessing if the child has been exposed to certain types of victimization at random times in their life. Experiencing four or more different types of victimization in different incidents in a given year was defined as polyvictimization by the researchers. The victimization measures used to define polyvictimization were collected from data from the Juvenile Victimization Questionnaire (Finkelhor et al., 2007).

Figure 2
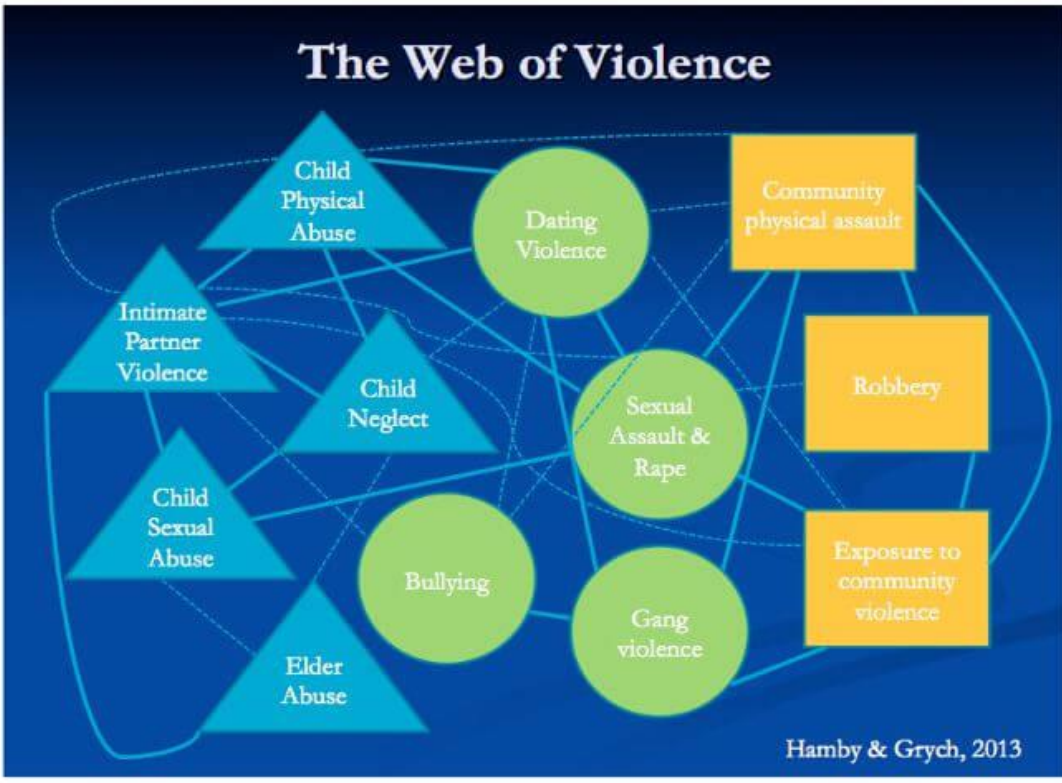
The Concept of Polyvictimization

This study focuses on child victimization experienced in multiple contexts and from multiple perpetrators, known as polyvictimization (Finkelhor, Ormrod, & Turner, 2007). The term polyvictimization describes the tendency for types of childhood victimization to co-occur within the context of family, school and neighborhood violence (Finkelhor et al., 2005, 2007a, 2007b, 2009). Polyvictimization was conceptualized as a victimization condition, rather than a victimization event (Finkelhor et al., 2007a). It was It was defined as "experiencing four or more instances of direct and witnessed interpersonal violence including conventional crime victimization, peer victimization, child maltreatment, sexual victimization, and witnessing or being indirectly affected by interpersonal violence in the home or community" (Finkelhor et al., 2004, p. 318; Finkelhor et al., 2005; Finkelhor et al., 2007b; Finkelhor, Turner, Hamby, & Ormrod, 2011; Hamby & Grych, 2013).

However, in the studies reviewed, the psychometrics for defining these four instances of interpersonal violence as the threshold for polyvictimization was imprecise in the literature i.e. why was four chosen instead of six or eight? It seems that some instances of victimization should be considered more severe or more detrimental to the physical, psychological and emotional wellbeing of the child. What happens to the child who has only three types of victimization but is more traumatized than a child with five instances of interpersonal victimization? This was unclear in the literature.

Risk Factors Associated with Polyvictimization

Individuals are most vulnerable to polyvictimization during childhood and adolescence (Finkelhor & Dzuiba-Leatherman, 1994). This is partly because some forms of victimization like child neglect and statutory rape are unique to childhood (Hamby & Finkelhor, 2000). It also stems from the age-related vulnerability that accompanies childhood, including dependence on others for protection and limited ability to get away from dangerous environments. For some children, these dangerous environments can include their family, schools, neighborhoods and other places that should be safe havens.

There are other vulnerabilities to consider when looking at risk factors for polyvictimization. These include poverty, community disorder and family members with mental health or substance abuse problems or issues with interpersonal violence (Hamby & Finkelhor, 2000; Turner et al., 2012; Hamby et al., 2018). It was found that among children and youth, experiencing polyvictimization is correlated with risk of exposure to non-victimization adversity (i.e. living in poverty and serious illnesses) and also to violent occurrences (i.e. use of weapons, injury, and violent or abusive sexual circumstances; Turner et al., 2016). These issues are not directly related to childhood, but they are correlated with increased risk in both childhood and adulthood.

Prevalence of Polyvictimization

Those who had experienced polyvictimization as compared to those who had not experienced polyvictimization were more likely to have certain characteristics and certain kinds of victimization. These children were disproportionately from single parent families and resided in large cities (cities with a population of at least 300,000). These

children were older and had considerably higher rates of other adverse life events (Finkelhor et al., 2005a, p. 1302). Additionally, incidents of polyvictimization for children with higher rates of polyvictimization were more likely to include an injury, a weapon, a caregiver perpetrator, and/or a sex offense than those that experienced lower rates of polyvictimization or no polyvictimization at all (Finkelhor et al., 2005a, p. 1302).

Findings from a study that included a nationally representative sample of children and adolescents indicated that nearly two-thirds of these youth had been exposed to more than one type of victimization, with 30% experiencing five or more types (Turner, Finkelhor, & Ormrod, 2010). Finkelhor, Ormrod, & Turner (2009b) also found lifetime victimization to be very common among the children and adolescents (2-17 years) that participated in the Developmental Victimization Survey.

Their research found that 79.6% of the participants had lifetime victimization with a mean of 3.7 different types of victimization (Finkelhor, Ormrod, & Turner, 2009b; Aho, 2016). Other studies that used the JVQ or modified versions of the JVQ reported that between 63% and 88.4% of youth experienced victimization in the previous year (Aho, 2015; Soler, Paretilla, Kirchner, & Forns, 2012). When looking specifically at children over ten, a study of 15-17 years olds by Cyr et al. (2013) found that the lifetime prevalence of polyvictimization averaged 87%.

In another study that included a nationally representative sample of 2- to 17-year-old children, 7% had seven or more different kinds of victimizations at the hands of different offenders over the course of a single year and 20% had five or more different kinds of victimizations (Finkelhor et al., 2009a). National samples of victimization among youth also suggested that youth in the U.S. have experienced an average of two

different types of traumatic events and approximately 18% of youth had experienced four or more different types of victimization.

When looking at race and ethnicity, Hispanics and non-Hispanic Blacks living in the United States disproportionately reported more traumatic events than non-Hispanic Whites (Andrew et al., 2015). Non-Hispanic Black and Hispanic participants also reported higher levels of polyvictimization and trauma-related mental health symptoms compared to non-Hispanic whites. However, children from low-income family environments, regardless of race or ethnicity, appeared to be at greater risk of negative mental health outcomes following trauma exposure compared to adolescents from high-income families (Andrews et al., 2015).

When looking at gender, Hamby, Finkelhor, & Turner (2013) found that for 18 of 21 victimization types that were tested (i.e. sexual assault, assault with a weapon, robbery, physical abuse by a caregiver, neglect, etc.) male perpetration was significantly more common than female perpetration. Most forms of physical assault and bullying showed a predominantly male-on-male pattern. All forms of sexual assault, plus kidnapping, showed a predominantly male-on-female pattern.

Additionally, many violence types were more severe when perpetrated by males vs. females and victimization types with stranger perpetrators had more male perpetrators. Victimizations with higher percentages of male-on-female and female-on-male incidents were more likely to be sexual offenses; and, female-on-female victimization had a higher percentage of verbal vs. physical perpetration (Hamby, Finkelhor, & Turner, 2013).

An additional study found that adolescents living with both parents were at lower risk of any form of victimization for both genders, while females were at higher risk of maltreatment, peer victimization, and, most significantly, sexual victimization than males (Andrews et al., 2015). It will be important to further analyze the differences in the rates of polyvictimization in order to implement effective prevention strategies that are specific to age, race, ethnicity, and gender.

Effects of Polyvictimization

It is extremely important for providers and researchers to identify the effect that polyvictimization has on fragile children. Polyvictimization is related to adverse psychological outcomes in several studies with nationally representative samples of youth (Turner, Shattuck, Finkelhor, & Hamby, 2017).

These psychological outcomes included increased trauma symptomology; difficulties with emotional regulation; increased internalizing behaviors such as anxiety, depression, suicide risk and post-traumatic stress disorder; and externalizing behaviors including drug abuse, anger and oppositional defiant/conduct disorder (Alvarez-Lister, Pereda, Guilera, Abad, & Segura, 2017; Cuevas, Finkelhor, Clifford, Ormrod, & Turner, 2010; Cuevas, Finkelhor, Ormrod, & Turner, 2009; Chan, 2013; Finkelhor et al., 2007; Kim & Cicchetti, 2010; Maughan & Cicchetti, 2002; Barnes et al., 2016).

A study conducted by Finkelhor et al (2007) demonstrated how important exposure to multiple forms of victimization (polyvictimization) is in accounting for increases in children's symptomatic behavior. A study using the JVQ found that 18% of the children experienced four or more different kinds of victimization. These children were categorized as children who have experienced polyvictimization by the authors of

the study. They also found that polyvictimization was highly predictive of trauma symptoms, controlling for prior victimization and prior mental health status (Finkelhor et al., 2007).

Focusing on only specific victimizations may lead to the underestimation of children's exposure to multiple victimizations. It may also underestimate the full impact of polyvictimization, and also underestimate the correlation between polyvictimization and child mental health (Finkelhor et al. (2007b; Turner, Finkelhor, & Ormrod, 2006). Additionally, focusing on specific types of victimization can lead to overestimation of the impact of that specific type of victimization because outcomes may be related to other events (Finkelhor et al., 2007b). A fragmented approach to children's exposure to victimization may also hamper the identification of the most frequently victimized children who are at high risk for a variety of severe and persistent physiological and psychosocial issues (Aho, 2016).

Polyvictimization has especially damaging effects on child wellbeing. Wellbeing is the state of being comfortable, healthy, or happy (Merriam-Webster, 2018). A significant portion of children in the United States who identify as victims of child abuse or bullying, or other single forms of violence are children who have experienced polyvictimization (Turner et al., 2017; Finkelhor, Ormrod, & Turner, 2007a, 2007b, 2009c; Finkelhor et al., 2005b; Turner et al., 2006). Findings have also indicated that the accumulation of exposure to violence across different types of violence (i.e. school violence, community violence, child abuse, and parental intimate partner violence) was most predictive of both future alcohol and marijuana use (Wright, Fagan, & Pinchevsky, 2013).

Additionally, only polyvictimization emerged as a consistent predictor of negative symptoms when looking at frequency of lifetime violence exposure, exposure by broad category (i.e. assault, maltreatment, sexual abuse, and witnessing violence) and polyvictimization (Turner et al., 2013; Hickman, Jaycox, Setodji, Kofner, Schultz, Barnes-Proby, & Harris, 2013). Polyvictimization, in particular, has been implicated as a powerful predictor of youth problem behavior (Kerig, 2018). In a study of youth in the juvenile justice system, the youth that had experienced polyvictimization had more exposure to multiple types of traumatic victimization, and exhibited severe emotional and behavioral problems (Turner et al., 2013; Ford, Grasso, Hawke, & Chapman, 2013).

Polyvictimization represents a diverse set of potentially traumatic adverse experiences that accumulate in their detrimental effects on health and well being which is consistent with research on Adverse Childhood Experiences (Turner et al., 2013; Felitti, Anda, Nordenberg, Williamson, Spitz, Edwards & Marks, 1998). However, unlike Adverse Childhood Experiences, polyvictimization is "not just a set of adverse events but a life condition where there is no 'safe haven' that allows for positive experiences and normal social development" (Turner, Shattuck, Finkelhor & Hamby, 2016).

A strong link exists between childhood exposure to multiple stressful events and conditions, and impaired neurological, physiological, and psychosocial systems that contribute to a wide array of mental and physical health issues. The polyvictimization model highlights the importance of identifying children's exposure to violence and victimization in all contexts. This will be extremely helpful in identifying victims and determining effective treatment strategies for polyvictimized children that target specific impairments (Turner et al., Shonkoff, Boyce, & McEwen, 2009).

Consequences of Polyvictimization

Studies have shown strong links between polyvictimization and negative outcomes in children and adolescents. When looking at the research, the evidence strongly suggests that polyvictimization (the exposure to multiple different forms of victimization) is a more powerful predictor of negative child outcomes than exposure to any individual type of victimization, even when it occurs repeatedly (Turner et al., 2013).

Children who experience polyvictimization are at particularly high risk of additional victimization and traumatic psychological effects (Finkelhor et al., 2007). In fact, the original measure of polyvictimization was a powerful predictor of trauma symptoms (anger, depression, and anxiety). The Definition of Diagnostic and Statistical Manual, Fourth Edition of the PAP outlines two criteria for traumatic events: 1) an event in which a person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others and 2) the person's response involved intense fear, helplessness, or horror. Traumatic events include violence, child maltreatment, and crime victimization. Also witnessing violence and violence victimization. PV appears to predict PTSD and depression symptoms better than sums of trauma exposures within a single type of trauma (i.e. multiple experiences of physical abuse) (Andrews et al., 2015).

Children who experience multiple types of victimizations are at risk for experiencing a number of difficulties in childhood that often persist into adulthood (Barnes et al., 2016; Chan, 2013; Finkelhor, Ormrod, & Turner, 2007; Kim & Cicchetti, 2010; Maughan & Cicchetti, 2002). Among adults, polyvictimization during childhood

has been associated with increased substance abuse, mental health difficulties and social struggles (Barnes, 2016; Elliott, Alexander, Pierce, Aspelmeier, & Richmond, 2009).

The consequences of polyvictimization are detrimental not only to victimized children but to adults that experienced polyvictimization and trauma early in life. It is important to identify all victimization, including polyvictimization early in life so that the impact of these multiple adverse, traumatic experiences can be lessened or eliminated.

Research Specific to Polyvictimization

David Finkelhor and his research team have completed numerous studies on polyvictimization over the last fifteen years. Evidence has shown that many children in the United States who are identified as victims of child abuse or bullying or other single forms of violence are actually children who experienced polyvictimization. Additionally, polyvictimization is more related to trauma symptoms than experiencing repeated victimizations of a single type - even repeated serious forms of victimization (Turner, Shattuck, Finkelhor, & Hamby, 2018).

Additionally, polyvictimization has especially damaging effects on child wellbeing and that it explains most of the psychological consequences of individual forms of victimization (Turner et al., 2018). In a study that looked at the effects of polyvictimization on adolescent social support, self-concept, and psychological distress, polyvictimization had a strong direct effect on distress and that the powerful effect of polyvictimization on youth mental health is, in part, due to its damaging influence on internal psychosocial resources (Turner et al., 2018; Finkelhor, Ormrod, & Turner, 2007a, 2007b, 2009b; Finkelhor et al., 2005b; Turner, Finkelhor, & Ormrod, 2010).

In a 2015 study, Turner, Shattuck, Finkelhor, & Hamby found that among six identified groups of youth (non-victims, home victims, school victims, home & school victims, community victims, and those children who experienced polyvictimization in multiple settings by multiple perpetrators at higher rates than the other five groups. These children also experienced the most serious aggravating characteristics. The researchers concluded that the basis of the particularly damaging effects of polyvictimization is the experience of victimization across multiple domains of the child's life (Turner et al., 2015).

And, when investigating re-victimization patterns, Finkelhor, Ormrod, & Turner (2007) found that children with four or more types of victimization in one year were at particularly high risk of persisting polyvictimization or re-victimization in the future. Similarly, almost 80% of the children and youth interviewed in the Developmental Victimization Survey reported being victimized at least one time in their life. This 'lifetime victimization' according to Finkelhor (2007b), occurs throughout the child's life into adulthood but this differs from the one-year time frame described in the original polyvictimization definition (Finkelhor et al., 2007) and, as mentioned previously, the psychometrics for defining these four instances as the threshold was unclear in the polyvictimization literature.

Limitations and Gaps in the Literature

A number of limitations were found in the literature. The first issue was the conceptualized pathways to polyvictimization model. Finkelhor, Ormrod, Turner, and Holt, (2009) considered sociodemographic background and identified four distinct pathways to becoming polyvictimized: a) residing in a dangerous community, b) living in

a dangerous family, c) having a having a chaotic, multi-problem family environment, and d) child has emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself, however, there was not a clear measure or threshold found in the research to define what makes someone polyvictimized or not polyvictimized.

Some articles set the threshold for polyvictimization at four or more types of violence. In other articles, the threshold for polyvictimization was set at five or more types of violence. There was also some confusion regarding the actual definition for polyvictimization because these children could be victims in multiple ways and they also could be victims in multiple stages of development. More research is needed that addresses how to assess and identify children that are polyvictimized.

There were several questions related to the psychometrics used to validate the Juvenile Victimization Questionnaire (JVQ). The psychometrics utilized are out of date and are not sufficient enough to support reliability, validity and national norms (Appendix A). There was no mention of a proper method to create cut-off values and the tests were based on classical test theory. The authors of the JVQ seemed to create cut-offs based on how the data 'looked' to them and by categorizing them based on mean which is not a proper method because there are no established criteria for creating cut-offs by categorizing them by mean (Kline, 2016).

Numerous studies have been completed regarding polyvictimization however, more studies, especially qualitative studies, are needed to explore the complexity and impact of the sociodemographic background of children and youth in relation to occurrence of polyvictimization. Additionally, most of the research on polyvictimization

has been completed using large data sets (thousands of individuals in a nationally represented sample); using a sample that large may be a deterrent for collecting qualitative data from each participant. The research is also lacking in solutions for preventing polyvictimization as well as supporting and treating those who have experienced polyvictimization.

Lastly, no studies were found that utilize the hypothesized pathways to assess victimization. Additionally, no studies were found that tested these hypothesized pathways for accuracy. It is imperative to discover if the conceptualized pathways to polyvictimization model is an accurate measure for victimization among fragile children.

Research Questions

Research Question 1

Does the theoretical structure of the four Pathways to Polyvictimization (Residing in a dangerous community, Living in a dangerous family, Having a chaotic, multi-problem family environment, and Child has emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself) and the seven Victimization Types (Psychological/emotional abuse during home visit, Psychological/emotional and physical abuse, Witness to domestic violence, Neglect, Witness to Assault with and without a weapon, bullying, emotional bullying, and theft and, Assault with no weapon) translate into an accurate, theoretically based measurement model for measuring victimization among fragile children?

Hypothesis 1. The theoretical structure of the four pathways to polyvictimization and the seven victimization types is an accurate measurement model of victimization among fragile children.

Research Question 2

Which item has the strongest factor loading for each of the eleven factors?

Hypothesis 2. The items with the strongest factor loadings for each of the eleven factors will be the items that address direct victimization of the child.

Research Question 3

What is the strength and direction of the correlation between the eleven theoretical factors (the four polyvictimization pathways and the seven victimization types)?

Hypothesis 3. There are strong correlations between each of the eleven theoretical factors.

Research Question 4

Are the four pathways to polyvictimization predictors of the seven victimization types (with regression weights different from zero)?

Hypothesis 4. The four pathways to polyvictimization are strong predictors of the seven victimization types.

CHAPTER III: RESEARCH DESIGN AND METHODS

This study is used a correlational research design. Correlational research answers the question, "what relationship exists"? In correlational research, variables are not manipulated or influenced but instead are measured and analyzed to look for relations or correlations. In the current study, the author will look for either positive or negative directions and the degree or strength of the relationship.

Secondary Data Analysis

A secondary analysis of an existing data set was used for this study. One advantage of using secondary data is that it is economical because another researcher has collected the data (Doolan & Froelicher, 2009). Using secondary data saves the researcher money, time, and resources. A second advantage of using secondary data is that there is an extensive amount of data that is publicly available from the federal government, academic institutions and other reputable organizations (Doolan & Froelicher, 2009). Data is available from numerous studies on a large, national scale. There are also many data sets that are longitudinal so researchers can look at trends and changes over a longer period of time. Utilizing secondary data allows the researcher to answer research questions in less time and with lower costs than using other research approaches (Doolan & Froelicher, 2009).

Description of the Sample

For almost 20 years, research teams from both Princeton and Columbia universities have engaged in a longitudinal, national representative study named the Fragile Families and Child Wellbeing Study that looks at childbearing outside of

marriage and the possible consequences of birth out-of-wedlock. When the research

teams began their research in 2000, there was a scarcity of information in the literature

that explored the conditions and capabilities of new unwed parents and the wellbeing of

their children (Reichman et al., 2001). The teams found it very difficult to characterize

families with unwed parents and to assess parent and child wellbeing within these

families, mainly because there had been little success in collecting data on unwed fathers

(Reichman et al., 2001).

　　　　The researchers were initially able to capture this data by administering

interviews with mothers and fathers in the hospital shortly after the birth of their children.

Starting in the Year 9 data wave, researchers have been interviewing both parents or

primary caregivers and the original children in the study. The Fragile Families and

Childhood Wellbeing research team has shared the data and findings of the study publicly

since it began collecting data in 2000.

　　　　Participant data for the current study were from the Year 15 wave of the Fragile

Families and Child Wellbeing survey. All child participants were newborns at the start of

the study. The original survey was conducted between 1998 and 2000 and included a

total of 4,700 families; 3,600 unwed couples and 1,100 married couples and all families

resided in large cities (populations of 200,000 or higher) in the United States (Reichman,

et al., 2001).

　　　　Data collection for the Year 15 data wave took place in 2014-2017. All families in

the current study were classified under the child participant ID number. Some families

were lost to follow-up over the 15-year period. Additionally, some families were not

included in the current study if both the parent/caregiver (PCG) and the child did not

complete the Year 15 survey. The sample for the current study includes 3,427 children

and their parents/caregivers (PCGs) from the Year 15 Fragile Families and Child

Wellbeing data wave (Table 3). This is a sufficient sample size (n >200) for

Confirmatory Factor Analysis, which is the method of choice for this study.

There were 1,767 male and 1,660 female child participants included in the study

and all participants were between the ages of 14 and 19 with a mean age of 15.59 (SD =

.761). The majority of children identified themselves as Black/African American

(46.5%) followed by Hispanic/Latino youth (23.6%). White/non-Hispanic children made

up 17.1% of the sample. A total of 5.1% of children identified themselves as multi-

racial, non-Hispanic and 2.5% of the sample did not specific race or ethnicity. The

majority of surveys were completed via telephone (95%) and, the majority of interviews

were conducted in English (93.6%) and the remaining interviews (6.4%) were conducted

in Spanish.

Most of the children in the sample lived with their biological mother (88%) all or

most of the time (98.2%). The majority of the biological PCGs (71%) were not married

to the child's biological parent at the time of the interview however, 25.1% of the

biological PCGs were married to new partners.

Income was reported by 75% of the PCGs participating in the sample. Income

was reported using five poverty categories:

1. 13.6% of families reported income at below 49% of the U.S. Federal Poverty

    Level

2. 17.1% of families reported income at 50-99% of the U.S. Federal Poverty Level

3. 28.4% of families reported income at 100-199% of the U.S. Federal Poverty
   Level

4. 14.6% of families reported income at 200-299% of the U.S. Federal Poverty
   Level

5. 26.3% of families reported income at or above 300% of the U.S. Federal Poverty
   Level

The following is an example of calculating the 2018 U.S. Federal Poverty Level:

The 2018 U.S. Federal Poverty Level (FPL) for a family of four was $25,100 at 100% of

the FPL and $75,300 for a family of four at 300% of the FPL (U.S. Department of Health

and Human Services, 2018).

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is a type of Structural Equation Modeling

(SEM) that deals specifically with the relationships between observed variables and latent

variables (Hoyle, 2014). It is concerned with estimating parameters and testing

hypotheses regarding the number of factors underlying the relationship among a set of

indicators (Kline, 2016). In CFA, the researcher theorizes a structural model in advance

because there should be an explicit theory of the structure of the data that is being

investigated. The hypothesized polyvictimization measurement model specifies the

number of latent variables (factors), the relationship between the observed variables

(items) and factors, and also error terms, which include any unique factors and

measurement error.

In this study, 1) CFA was used to test the hypothesis that the 11-factor

hypothesized polyvictimization measurement model, which consists of four pathways to

polyvictimization and seven victimization types is a plausible measurement (data generation) model of victimization for fragile children. 2) CFA was also used to identify the strongest indicators of victimization for each hypothesized pathway to polyvictimization and for each of the seven victimization types. This is completed by ranking the absolute value of the factor loadings, without a test of difference between them. Additionally, 3) CFA was utilized to estimate the correlations between each of the four hypothesized pathways to victimization and the seven victimization types. Lastly, 4) CFA was used to identify if the four pathways to polyvictimization are predictors of each of the seven victimization types.

American Sociologist David Finkelhor and his research team (2005a; 2009) developed both the Pathways to Polyvictimization measurement model and the seven victimization types from results of the Developmental Victimization Survey (Finkelhor et al., 2009).

CFA is a validation technique that is driven by theory. The relationship between the observed variables (items) and latent variables (factors) are put into a theorized measurement model that is developed *apriori* using only assumptions of the relationships of the variables that have been presumed from theoretical reasoning found in the literature, not from observations or experiments (Bovaird & Koziol, 2012).

Factor analysis yields information about underlying, latent dimensions that are not measured directly (Polit and Beck, 2007). In the current study, the hypothesized polyvictimization measurement model was tested to validate its usefulness as an accurate measure of victimization among vulnerable children. The observed variables (items) in the hypothesized polyvictimization measurement model were set as indicators for the

latent variables (factors). The seven victimization types and the four hypothetical

pathways to polyvictimization model were the factors for this model. Factors are

unmeasured variables corresponding to an abstract construct.

Factors are captured with two or more items that are indicators of the underlying

construct. The indicators are imperfect approximate measures of the factors. By using

CFA the respective item measurement error is reduced. The items for this study were

selected from the Fragile Families and Child Wellbeing (a national, longitudinal study)

dataset (2001). The dataset consists of answers to survey items from parents/primary

caregivers (PCGs) and children, and observations made when researchers conducted

home visits to administer the survey. PCGs and children in this dataset had been

involved in the study for approximately 15 years. This current study used the Year 15

data wave of the Fragile Families and Child Wellbeing study.

The survey items from the Fragile Families and Child Wellbeing dataset were

answered using multiple Likert scales, which were ordinal in nature. CFA is an

appropriate tool to use when ordinal data is used. These data are non-numeric concepts.

The order of these ordinal or non-numeric concepts are known and are rank-ordered on

scales i.e. "very likely, likely, somewhat likely, somewhat unlikely, etc." however, the

"differences between these observations (i.e. which one individual has more or less of the

attribute than another individual) cannot be quantified" (Bovaird & Koziol, 2012). This

is where CFA can be extremely helpful.

Factors are not directly observable, so they are measured by two or more related

behaviors or concepts. The assumption being made is that the relationship between these

behaviors or concepts is due to those hypothetical factors as the antecedents or

originating events. It can also be assumed that because the factor exists, it will be possible to observe its manifestation with the availability of appropriate indicators or items (Bovaird & Koziol, 2012).

The data analysis was completed using R statistical package (R Core Team, 2018). The data analysis approach was to use Structural Equation Modeling (SEM), with the R package lavaan (Roseel, 2012). This framework allows us to reduce measurement error of the instruments and to estimate a more precise measure of the factors underlying the scale items (Kline, 2016; Little, 2013). As presented by Raykov (2012), the SEM framework presents beneficial conditions to develop and test scales, such as evaluation of multidimensional structures, correlations between constructs, evaluation of multiple reliability measures, and correction for measurement error (Kline, 2016).

For the current study, the victimization measures and the pathways to polyvictimization were put into a hypothesized polyvictimization measurement model and tested using the Fragile Families and Child Wellbeing dataset. This dataset included completed interviews of children and caregivers that were comprised of questions that asked about different types of victimization.   Initially, 438 items were chosen from the dataset that assessed several victimization types described in the JVQ.

The chosen items were assigned to seven victimization types and to the four pathways to polyvictimization (Appendix B). Items from only seven of the twelve victimization types were used in the current study. The four pathways to polyvictimization are: Polyvictimization Pathway One: Residing in a Dangerous Community (PP1DC), Polyvictimization Pathway Two: Living in a Dangerous Family (PP2DF), Polyvictimization Pathway Three: Having a chaotic, multi-problem family

environment (PP3CF), and Polyvictimization Pathway Four: Child Has Emotional Problems that Increase Risk Behavior, Engender Antagonism and Compromise the Capacity to Protect Oneself (PP4EP).

The seven victimization types are: Victimization Type: Psychological/Emotional Abuse during Home Visit (PVPEV), Victimization Type: Psychological/Emotional and Physical Abuse (PVPEPA), Victimization Type: Witness to Domestic Violence (PVWD), Victimization Type: Neglect (PVNG), Victimization Type: Witness to Assault with and without a weapon (PVWW), Victimization Type: Bullying, Emotional Bullying, and Theft (PVB), and Victimization Type: Assault with No Weapon (PVAN).

The data extracted from the Fragile Families and Child Wellbeing dataset was used to run descriptive statistics, Confirmatory Factor Analysis, correlations, and latent regression analysis to answer the four research questions in the current study: 1) Does the theoretical structure of the four pathways to polyvictimization and the seven victimization types translate into an accurate measurement model of victimization among fragile children? 2) Which item has the strongest factor loading for each of the eleven factors? 3) What is the strength and direction of the correlation between the eleven theoretical factors? And, 4) Are the four pathways to polyvictimization predictors of the seven victimization types?

Missing data was handled using Multiple Imputation (MI). This is a modern method to properly handle missing data, thereby improving parameter recoverability, reducing bias, and increasing power (Baraldi & Enders, 2010; Enders, 2010; van Buuren, 2012). MI was done with the R package mice (van Buuren & Groothuis-Oudshoorn, 2011), and the imputations were analyzed with the semTools package (Schoemann, &

Rosseel, 2012). A cut-point decision was made to only include those items that had complete data in at least 30% of the Fragile Families and Child Wellbeing dataset sample. Using this criterion, 108 items were deleted from the database.

Items were chosen from the dataset that assessed several victimization types described in the JVQ. These items were assigned to victimization types or to one of the pathways to polyvictimization and are the items in the study. All items from the Fragile Families and Child Well Being data set consisted of questions that were answered in various ordered Likert scales. Given this, the items were treated as ordered categorical instead of continuous; treating them as continuous would have represented a misspecification of the model.

The categorical Confirmatory Factor Analysis (CFA) approach was followed. This approach analyzes the data in function of the polychoric correlation between ordered items. Polychoric correlation is a technique for estimating the relationship between two theorized normally distributed continuous latent items, from two observed ordinal items (Kline, 2016). This correlation assumes that there is an unobserved underlining variable that accounts for the ordered response (Bovaird & Kozoil, 2012).

The model was evaluated through multiple fit indices, specifically Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and gamma-hat. It has been shown in previous studies that the gamma hat fit index is not sensitive to sample size or model complexity (Fan and Sivo, 2007). For CFI, and gamma-hat, higher values closer to 1 represent better fit; and for RMSEA, lower values closer to 0 represent better fit (Kline, 2016; Little, 2013; Fan & Sivo, 2007).

Some adjustments to the proposed items and the proposed victimization type factors were made due to the results that were found as the model was tested. Because of missing and incomplete data from the Fragile Families and Child Wellbeing data set, another 265 items were deleted in addition to the 108 items that were deleted prior to the model fit testing. There were a total of 65 items that were utilized in the hypothesized polyvictimization measurement model. A list of identifiers for the 65 remaining items can be found in Table 2.

The factorial structure for the hypothetical pathways to polyvictimization model was tested with a theoretical structure that included an 11-factor model, where the 65 items defined eleven unobserved variables within the hypothesized polyvictimization measurement model. The functions of multiple fit indices, null hypothesis model comparison, and theoretical relevance were performed to check the factorial structure.

Additionally, the items in the original Psychological/ Emotional Abuse factor had to be separated into two factors. The first factor that resulted from this separation was created using the observations made by the Fragile Families and Child Wellbeing researchers who interviewed the respondents in person during a home visit. This new factor was named Victimization Type - Psychological/Emotional Abuse during Home Visit (PVPEV).

The second factor that resulted from the separation of the psychological and emotional abuse victimization type was created using the respondents' self-reported answers. However, the model testing also showed that the correlation between the Victimization Type: Psychological/Emotional Abuse factor, which consisted of the respondents' self-reported answers about psychological and emotional abuse, and the

Victimization Type: Physical Abuse factor, which were the respondents' self-reported answers about physical abuse in the home, was higher than one, which resulted in a Heywood case, showing that the parameter was out of bounds (Kline, 2016). This indicated that the factors were not distinguishable between each other. Therefore, the items were combined. The new factor was named Victimization Type - Psychological/Emotional and Physical Abuse (PVPEPA).

Additionally, the Witness to Assault with a Weapon and the Witness to Assault without a Weapon victimization types were combined to make one victimization type. The new factor was named Victimization Type: Witness to Assault with or without a Weapon (PVWW). And, the Bullying, Emotional Bullying and Theft victimization types were combined to make one factor named Victimization Type: Bullying, Emotional Bullying and Theft (PVB).

To analyze each variable using CFA, the items were assigned to a factor and were set as an indicator for that respective factor. Factor loading measures the relationship between factors and items – in this case, the testing of the theoretical polyvictimization measurement model. An absolute value for the factor loadings of 0.200 and above was deemed acceptable for this study. There were eleven factors that were represented in the measurement model for the current study. Seven victimization types in the theorized polyvictimization model were examined and, four pathways to polyvictimization in the theorized polyvictimization measurement model were examined.

The Victimization Type: Psychological, Physical or Emotional Abuse during Home Visit (PVPEV) factor was created with on two items as indicators from the Year 15 Wave of the Fragile Families and Child Wellbeing dataset. One item measured if a

parent or caregiver scolded, derogated, or criticized the youth in front of the researcher during the home visit. This item was measured on a scale of 1 to 2; 1 was Parent/Caregiver (PCG) scolded more than once and 2 was PCG did not scold more than once. The second variable measured if a parent or caregiver shouted at the youth during the home visit. This item was measured on a scale of 1 to 2; 1 was PCG shouted and 2 was PCG did not shout.

The Victimization Type: Psychological/Emotional and Physical Abuse (PVPEPA) factor was created with four items as indicators from the Year 15 Wave of the Fragile Families and Child Wellbeing dataset. The items measured instances of psychological and emotional abuse such as a parent shouting, yelling screaming or swearing/cursing at youth. These items were measured on a scale of 1 to 3; 1 was never, 2 was sometimes and 3 was often. The items were self-report and were answered by both PCGs and the children in the study. This item also measured instances of physical abuse such as the parent or caregiver hitting or slapping the youth. The items were measured on a scale of 1 to 3; 1 was never, 2 was sometimes and 3 was often.

The Victimization Type: Witness to Domestic Violence (PVWD) factor was created with two items as indicators from the Year 15 Wave of the Fragile Families and Child Wellbeing dataset. The items measured instances of the youth witnessing domestic violence such as witnessing a physical fight and the PCG being seriously hurt by a spouse or partner. These items were measured on a scale of 1 to 2; 1 was yes and 2 was no.

The Victimization Type: Neglect (PVNG) factor was created with six items as indicators from the Year 15 Wave of the Fragile Families and Child Wellbeing dataset. The items measured instances of neglect such as the PCG and youth were evicted for not

paying rent/mortgage in full in the last year, the youth and PCG stayed at a shelter or a place not meant for housing in the past year, someone in the household did not see the doctor or go to the hospital because of cost, the utilities were turned off, the telephone was disconnected because of not having enough money in the past year, the youth or PCG was hungry because they could not afford food in the last year. The items were measured on a scale of 1 to 2; 1 was yes and 2 was no.

Victimization Type: Witness to Assault with or without a Weapon (PVWW) factor was created with on three items as indicators from the Year 15 Wave of the Fragile Families and Child Wellbeing dataset. These items measured the frequency that the youth witnessed a person attacked with a weapon in the past year, the frequency that the youth witnessed a person being shot at in the past year, and the frequency that the youth witnessed a person getting hit, slapped or punched in the last year. These items were measured on a scale of 1 to 5; 1 was never, 2 was once, 3 was 2 to 3 times, 4 was 4 to 10 times and 5 was more than 10 times.

The Victimization Type: Bullying, Emotional Bullying and Theft (PVB) factor was created with on four items as indicators from the Year 15 Wave of the Fragile Families and Child Wellbeing dataset. The items measured instances of bullying and theft such as kids at school hitting or threatening to hurt the youth physically, kids at school picking on the youth or saying mean things to youth, kids at school purposely leaving the youth out of activities, and kids at school taking things from the youth i.e. money or lunch without asking. The items were measured on a scale of 1 to 4; 1 was less than once a week, 2 was once a week, 3 was several times a week, and 4 was about every day.

The Victimization Type: Assault with No Weapon (PVAN) factor was created with on three items as indicators from the Year 15 Wave of the Fragile Families and Child Wellbeing dataset. One item measured instances of assault without a weapon including the youth got into a serious physical fight. This item was measured on a scale of 1 to 4; 1 was never, 2 was 1 or 2 times, 3 was 3 or 4 times, and 4 was 5 or more times. Two additional items including a police officer used physical force during an incident, and the youth has been a victim of a crime were measured on a scale of 1 to 2; 1 was yes and 2 was no.

There were six items from the Fragile Families and Child Wellbeing database that were indicators to create the Polyvictimization Pathway One: Residing in a dangerous community factor. This group of items was labeled PP1DC. The items measured danger in a community such as people in the neighborhood don't get along with each other, parents/caregiver (PCG) is gangs are a problem in the neighborhood, and the youth feels unsafe walking around the neighborhood during the day or at night.

The instances of PCG afraid to let youth outside because of neighborhood violence was measured on a scale of 1 to 2; 1 was yes and 2 was no. The instances of people in the neighborhood don't get along with each other, parents/caregiver (PCG) thinks gangs are a problem in the neighborhood, and the youth feels unsafe walking around the neighborhood during the day or at night were measured on a scale of 1 to 4; 1 was strongly agree, 2 was somewhat agree, 3 was somewhat disagree and 4 was strongly disagree.

Five items from the Fragile Families and Child Wellbeing database set as indicators the Polyvictimization Pathway Two: Living in a dangerous family factor. This

group of items was labeled PP2DF. The items measured instances of living in a dangerous family such as the PCG using illegal drugs in the past year, the spouse or partner of the PCG had alcohol or drug use problems, the PCG spent time in jail since last interview, the PCG sold drugs, prostituted or hustled in the past year. The items were measured on a scale of 1 to 2; 1 was yes and 2 was no.

Five items from the Fragile Families and Child Wellbeing database were set as indicators to create the Polyvictimization Pathway Three: Having a chaotic, multi-problem family environment factor. This group of items was labeled PP3CF. These items measured instances of having a chaotic family environment such as youth and/or PCG not being able to hear or think at home, and youth and/or PCG describes home as a zoo. These items were measured on a scale of 1 to 3; 1 was not true, 2 was sometimes true, and 3 was often true. The variable that addressed living at or below the poverty level was measured on a scale of 1 to 5; 1 was <49%, 2 was 50-99%, 3 was 100-199%, 4 was 200-299%, and 5 was 300+%.

A total of 25 items from the Fragile Families and Child Wellbeing database were set as indicators to create the Polyvictimization Pathway Four: Child has emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself factor. This group of items was labeled PP4EP. The items measured instances of a child having emotional or behavioral problems such as youth is cruel, bullies, or shows meanness to others, youth destroys things belonging to family and others, youth has temper tantrums or a hot temper, youth gets in many fights, youth threatens people, youth has taken part in a group fight, youth can't sit still, is restless or hyperactive, youth lies or cheats, youth argues a lot, youth runs away from home, youth

sets fires, youth steals inside and/or outside of their home, youth is unhappy, sad or depressed, and youth vandalizes. These items were measured on a scale of 1 to 3; 1 was never, 2 was sometimes and 3 was often.

The additional items measured for Polyvictimization Pathway Four were: youth has gotten into a serious physical fight, youth has hurt someone badly enough to need bandages or medical care, youth physically attacks people, youth has stolen something worth more than $50, youth has taken something from a store without paying for it, youth has gone into a house or building to steal something, youth has used or threatened to use a weapon to get something, youth deliberately damaged property that did not belong to them, and youth sold marijuana or other drugs. These items were measured on a scale of 1 to 4; 1 was never, 2 was 1 or 2 times, 3 was 3 or 4 times, and 5 was 5 or more times. The variable of youth has been suspended/expelled was measured on a scale of 1 to 2; 1 was yes and 2 was no.

Provisions for the Protection of Human Rights

A current Marquette University-affiliated CITI Program Research Ethics and Compliance Training certificate was obtained and submitted this report to the Marquette University Office of Research Compliance. A completed Internal Review Board (IRB) application was also submitted to Marquette University's IRB in the Office of Research Compliance. It was decided by the IRB Manager at the Office of Research Compliance that this current study does not meet the criteria for "Human Subject" based on the activities described in the IRB submission and discussions between the IRB Manager and this author.

The data being used in this study is publicly available and contains de-identified datasets. Additionally, the study does not consist of intervening or interacting with living individuals or using living individuals' identifiable private information. Therefore, it was decided by the IRB Manager that this study does not require a Marquette University IRB review. A copy of the correspondence between the author and the Office of Research Compliance is located in Appendix B. A record of this decision is also on file with the Marquette University Office of Research Compliance.

Limitations of Research Design and Methods

There are numerous advantages to using secondary data but there are also some disadvantages. A major disadvantage of using secondary data is that it may not answer all of the researcher's specific research questions. Additionally, the data may not contain specific information that would be important to the researcher's study (Doolan & Froelicher, 2009).

Another disadvantage of using secondary data is that it is unknown how the data collection process was completed. Since the researcher did not collect the data, there is no control over what was contained in the data set. In this current study, many items from the Fragile Families and Child Wellbeing dataset had missing data. Originally, 438 items were chosen for the study however, 108 of those items had to be removed because the there was complete data for less than 30% of the study participants. Additionally, 265 items were not included in the measurement model, as they did not present large factor loadings, meaning a small relation between the respective items and their factor. The final number of items included in the measurement model was 65.

CHAPTER IV: RESULTS

Presentation of the Data

Research Question 1

Does the theoretical structure of the four Pathways to Polyvictimization (Residing in a dangerous community, Living in a dangerous family, Having a chaotic, multi-problem family environment, and Child has emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself) and the seven Victimization Types (Psychological/emotional abuse during home visit, Psychological/emotional and physical abuse, Witness to domestic violence, Neglect, Witness to Assault with and without a weapon, bullying, emotional bullying, and theft and, Assault with no weapon) translate into an accurate, theoretically based measurement model for measuring victimization among fragile children?

Hypothesis 1. The theoretical structure of the four pathways to polyvictimization and the seven victimization types is an accurate measurement model of victimization among fragile children.

Measurement Model

The goodness of fit between the hypothesized polyvictimization measurement model and the data obtained from the Fragile Families and Child Wellbeing dataset was assessed. The 11-factor model presented fit indices with CFI = 0.890, gamma hat = 0.983; and, with RMSEA = 0.0167 (90% CI: 0.0159, 0.0175).

The theoretical threshold chosen for this study was $\alpha = .05$. The p value is the estimated value after model testing that is compared against the chosen theoretical threshold. The null hypothesis (that there is no relationship between two measured phenomena or no association among groups) is rejected if the p value $< .05$ (Klein, 2016). The null hypothesis, that the factor loadings are equal to 0 ($p < .05$), was rejected for all but one item in the hypothesized polyvictimization measurement model.

Table 4 shows the factor loadings and R^2. Factor loadings for the four pathways to polyvictimization and the seven victimization types were completed. The threshold chosen for the factor loading estimates of the items in the hypothesized polyvictimization measurement model was > 0.2. The average for all of the factor loadings in the hypothesized polyvictimization measurement model was 0.557.

R^2 was also calculated for the hypothesized polyvictimization measurement model. The R^2 is the proportion of explained variance in the item by the respective factor. There was an average R^2 of 0.457, with a range of 0.096 to 0.857 among the items.

Residual correlation between items was also examined for the current study. The correlations that rejected the null hypothesis of no relation between items ($p < .05$) have a relationship above and beyond the pathway they are assigned to. The items that rejected the null hypothesis had an average correlation of 0.408, ranging from 0.261 to 0.571.

Correlations in the current study were operationally defined as small (≤ 0.299), medium (0.300 - 0.499) and large (≥ 0.500) effect size (ES). Medium ES "represents an effect likely to be visible to the naked eye of a careful observer; small ES is noticeably

smaller than medium but not so small to be trivial, and large ES is the same distance above medium as small was below it" (Cohen, 1992, p. 156).

Research Question 2

Which item has the strongest factor loading for each of the eleven factors?

> **Hypothesis 2.** The items with the strongest factor loadings for each of the eleven factors will be the items that address direct victimization of the child.

> Factor loadings were first completed for the seven victimization types. The highest factor loading was 0.815 for both of the items that were loaded onto the Victimization Type: Psychological, Physical or Emotional Abuse during Home Visit (PVPEV) factor. The highest factor loading for the Victimization Type: Psychological/Emotional and Physical Abuse (PVPEPA) factor was 0.730.

> The highest factor loading for Victimization Type: Witness to Domestic Violence (PVWD) factor was 0.749 for both of the items that were loaded onto this factor. The highest factor loading for the Victimization Type: Neglect (PVNG) factor was 0.795. The highest factor loading for Victimization Type: Witness to Assault with and without a weapon factor was 0.905. The highest factor loading for the Victimization Type: Bullying, Emotional Bullying and Theft (PVB) factor was 0.926.

> The highest factor loading for the Victimization Type: Assault no weapon (PVAN) factor was -0.587, which was an unusual factor loading because it was a negative number. After examining the items associated with Assault no weapon, it was established that the victimization type needed to be reversed to make it a positive victimization type because the 'got into serious physical fight' item had a positive

direction, so the name for this factor was changed to Victimization Type: No assault no weapon (PVAN) which will be used in the remainder of the paper and in all tables.

Next, factor loadings for the four pathways to polyvictimization were completed. The highest factor loading for the Polyvictimization Pathway One: Residing in a dangerous community (PP1DC) factor was 0.773. The highest factor loading for the Polyvictimization Pathway Two: Living in a dangerous family (PP2DF) factor was 0.736.

The highest factor loading for the Polyvictimization Pathway Three: Having a chaotic, multi-problem family environment (PP3CF) factor was -0.740; again, this was an unusual factor loading because it was a negative number. After examining the items associated with PP3CF, it was established that the pathway needed to be reversed to make it a positive pathway because the 'below poverty level' item had a positive direction, so the name for this factor was changed to Polyvictimization Pathway Three: Having a non-chaotic, non-multi-problem family environment (PP3CF) which will be used in the remainder of the paper and in all tables. Lastly, the highest factor loading for the Polyvictimization Pathway Four: Child has emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself (PP4EP) factor was 0.823.

The highest factor loading for all eleven factors in the model was 0.926 for the item 'kids at school hit you or threaten to hurt you physically', which falls under the Victimization Type: Bullying factor. The lowest factor loading for all of the factors in the model was 0.206 for the item 'gotten into a serious physical fight' which falls under the Polyvictimization Pathway Four: Child has emotional or behavioral problems that

increase risk behavior, engender antagonism, and compromise the capacity to protect oneself (PP4EP).

Research Question 3

What is the strength and direction of the correlation between the eleven theoretical factors (the four polyvictimization pathways and the seven victimization types)?

      Hypothesis 3. There are strong correlations between each of the eleven theoretical factors.

      Table 5 shows the factor correlations for the hypothesized polyvictimization measurement model. Factor correlations were analyzed for all eleven factors in the model. These correlations estimated the direction and strength of the linear relation between the factors in the model. The null hypothesis of no relation between factors ($p < .05$) was rejected by 36 factor correlations in the model, which is approximately 55% of the correlations in the hypothesized polyvictimization measurement model. This means that it was possible to estimate the direction and strength of the relationships as different from 0 between 55% of the factor pairings.

      Correlations for the seven victimization types were examined first. The following correlations rejected the null hypothesis of no relation between factors ($p < .05$). 'Victimization Type: Psychological/Emotional Abuse during Home Visit' (PVPEV) had a small, negative correlation with 'Victimization Type: Psychological/Emotional and Physical Abuse' (PVPEPA) and a large, negative correlation with 'Polyvictimization Pathway Four: Child having emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself' (PP4EP).

PVPEPA had a small, negative correlation with 'Victimization Type: Neglect' (PVNG), a small, positive correlation with 'Victimization Type: Witness to Assault with and without a weapon' (PVWW) and a small, positive correlation with 'Victimization Type: Bullying, Emotional Bullying, and Theft' (PVB). PVPEPA had a medium, positive correlation with 'Victimization Type: Assault with No Weapon' (PVAN) and a small, negative correlation with 'Polyvictimization Pathway One: Residing in a Dangerous Community' (PP1DC). PVPEPA also had a medium, negative correlation with Pathway Two: Living in a dangerous family and a medium, negative correlation with 'Polyvictimization Pathway Three: Having a non-chaotic, non-multi-problem family environment' (PP3CF). Additionally, PVPEPA had a large, positive correlation with PP4EP. 'Victimization Type: Witness to Domestic Violence' (PVWD) had a large, positive correlation with PP2DF and a medium, negative correlation with PP4EP.

PVNG had a medium, negative correlation with PVWW and a small, negative correlation with PVAN. PVNG also had a medium, positive correlation with PP1DC and PP3CF and a large, positive correlation with PP2DF. Lastly, PVNG had a small, negative correlation with PP4EP. PVWW had a medium, positive correlation with PVAN and PP4EP and had a medium, negative correlation with PP2DF and PP3CF. PVWW also had a large, negative correlation with PP1DC. PVB had a medium, positive correlation with PVAN and a small, negative correlation with PP1DC. PVB also had a small, positive correlation with PP4EP. PVAN had medium, negative correlations with PP1DC and PP3CF and a large, negative correlation with PP2DF. PVAN also had a large, positive correlation with PP4EP.

The correlations for the pathways to polyvictimization were also examined. The following correlations rejected the null hypothesis of no relation between factors (p < .05). PP1DC had medium, positive correlations with PP2DF and PP3CF and a small, negative correlation with PP4EP. PP2DF had medium, positive correlation with PP3CF and a medium, negative correlation with PP4EP. Lastly, PP3CF had a medium, negative correlation with PP4EP. The correlations that failed to reject the null (p > .05). This means the range of value for these items was too large to establish if the item had positive or negative correlations with the other factors in the model.

Research Question 4

Are the four pathways to polyvictimization predictors of the seven victimization types (with regression weights different from zero)?

      Hypothesis 4. The four pathways to polyvictimization are strong predictors of the seven victimization types.

Regression Model

Regression analysis was conducted for the current study. This method goes beyond correlation by adding prediction capabilities and examining the relationship between factors. Regression analysis also measures the strength and direction of the predictor pathways. In this study, regression was used to examine if the four pathways to polyvictimization were unique predictors of the seven victimization types in the hypothesized polyvictimization measurement model (Table 6). There were eight instances where the null hypothesis that regression is equal to 0 (p < .05), was rejected.

Regression analysis was also completed for Victimization Type: Witness to Domestic

Violence but there was no significant regression found for the Victimization Type.

However, the proportion of variance for Victimization Type: Witness to Domestic

Violence was 0.371.

CHAPTER V: DISCUSSION

Interpretation and the Theoretical, Practical and Statistical
Importance of the Findings

Measurement Model

Research Question 1. Does the theoretical structure of the four Pathways to Polyvictimization and the seven Victimization Types translate into an accurate, theoretically based measurement model for measuring victimization among fragile children?

Hypothesis 1. The theoretical structure of the four pathways to polyvictimization and the seven victimization types is an accurate measurement model of victimization among fragile children.

- **Hypothesis 1 is supported by the study findings**. It is probable that theoretical structure of the four pathways to polyvictimization and the seven victimization types is an accurate measurement model of victimization among fragile children.

Confirmatory Factor Analysis. Confirmatory Factor Analysis was used to test the validity of the 11-factor theoretical structure of the four pathways to polyvictimization and the seven victimization types. The test confirmed that overall, the actual 11-factor model presented good fit indices with higher CFI = 0.890, gamma hat = 0.983; and, with RMSEA = 0.0167 (90% CI: 0.0159, 0.0175). With these results, it can be concluded that the actual 11- factor model has overall good model fit, which means

that this hypothesized polyvictimization measurement model is a plausible factorial structure for the data generation process for this population of vulnerable children.

Factor loadings. The threshold chosen for the factor loading estimates of the items in the hypothesized polyvictimization measurement model was > 0.2. The average for all of the factor loadings in the hypothesized polyvictimization measurement model was 0.557, which indicates a good relationship between the items and the factor that the items are defining.

The null hypothesis that the factor loadings are equal to 0 ($p < .05$) was rejected for all but one item in the hypothesized polyvictimization measurement model. This means that there was a measured relationship between all factors and items, except for that item. This item was 'youth got into a serious physical fight' which was also the weakest factor-loading item for the entire hypothesized polyvictimization measurement model. The p-value for this item was 0.254, which means the range of value for the item is too large to establish if the item has a positive or negative relationship with its assigned factor.

There were six items in the hypothesized polyvictimization measurement model that had a negative direction. The items 'ever been a victim of crime' (-0.587) and 'officer used physical force during incident' (-0.309) were under the Victimization Type: Assault no weapon factor. However, this factor had one item assigned to it that had a positive direction. This meant that the entire factor went in a positive direction so the factor had to be reversed and was renamed Victimization Type: No assault no weapon. The negative relationship that the items have with the renamed factor now seem more plausible - having no assaults does not fit with being a victim of a crime or with an

officer using physical force. Conversely, the positive item of 'got into a serious physical fight' (0.481) also seems more probable with the renamed factor. You would not expect to have physical fights assigned to a factor about having 'no assaults'.

The items 'can't hear self think at home' (PCG's answer to this question; -0.740), 'can't hear yourself think in home' (child's answer to this question; -0.394), 'real zoo in home' (PCG's answer to this question; -0.363) and, 'home is a real zoo' (child's answer to this question; -0.640) were under the Victimization Type: Chaotic, multi-problem family environment factor. This factor also had one item assigned to it that went in a positive direction so it was also reversed and renamed Victimization Type: Non-chaotic, non-multi-problem family environment. The negative relationship that the items have with the renamed factor is now more conceivable. Having a non-chaotic environment means there would be less noise and less activity in the home so the home would be less like a 'zoo'.

The last item that went in a negative direction was 'youth has been suspended/expelled' (-0.695) which is assigned to Polyvictimization Pathway Four: Child has emotional problems that increase risk behavior, engender antagonize, and compromise the capacity to protect oneself. This factor was already in a positive direction so renaming it was not necessary. On the surface, this item and factor pairing does not make theoretical sense. One would expect that a child with emotional or behavioral problems has the typical profile of a child that would have an increased possibility of being suspended or expelled. And in this case, that is true. However, there was an issue with the original question in the Fragile Families Child and Wellbeing database for the variable of 'youth has been suspended/expelled' was measured on a scale

of 1 to 2; 1 was yes and 2 was no but, all of the other items assigned to the factor were measured on a scale of 1 to 3; 1 was not true, 2 was sometimes true, and 3 was often true. The answers for yes and no were reversed; this made the item and factor have an inverse relationship, however the measure, when analyzed correctly has a strong factor loading for 'emotional problems' and 'getting expelled' meaning there is a strong relationship between these factors.

One last interesting observation regarding the factor loadings is that 'youth gets into many fights' item in the PP4EP factor has a loading of 0.775 but the 'got into serious physical fights' item has a factor loading of 0.206 and rejects the null hypothesis that the factor loadings are 0 ($p < .05$). As stated earlier, the range of value for this item is too large to establish if the item has a positive or negative relationship with its assigned factor but it begs the question that the youth is possibly being seen as a victim of a fight instead of as a perpetrator or instigator.

$R^{2.}$. There was an average R^2 (proportion of variance) of 0.457, with a range of 0.096 to 0.857 among the items. This indicates that the items in the hypothesized polyvictimization measurement model shared approximately 46% of the variance with the other items representing the respective factor. This also suggests that the items assigned to each factor have something in common above and beyond the factor that they are assigned to. The percentage of 46% is considered to be a strong approximation; in some cases a 20% approximation is considered strong. This indicates that the items have a relationship, even when they are not assigned to the same factor.

Item residual correlations. The items that rejected the null hypothesis had an average correlation of 0.408, ranging from 0.261 to 0.571. The items 'gangs are a

problem in this neighborhood' and 'afraid to let youth outside because of neighborhood violence' had the only small, positive item correlation (0.261) in the study. Positive correlation is a relationship between two variables in which both variables move in tandem. Positive correlation means that the scores on one item are positively related with scores on the other item; as one item increases, the other item increases.

So, for this item correlation, 'gangs are a problem in this neighborhood' and 'afraid to let youth outside because of neighborhood violence' have a pretty small relationship. As one item increased, the other item only slightly increased. Perhaps the relationship is smaller because the being afraid to go outside and having gangs in the neighborhood are not always going to be connected outside of the hypothesized polyvictimization measurement model; the reason behind the fear may not be because of gangs.

There were five items that had a medium, positive correlation with another item. The items were 'I feel unsafe walking around my neighborhood during the day' and 'I feel unsafe walking around my neighborhood at night' (0.441); 'can't hear yourself think in your home' and 'it's a real zoo in your home' (0.371); 'gotten into a serious physical fight' and 'taken part in a group fight' (0.454); 'hurt someone badly enough to need bandages or medical care' and 'taken part in a group fight' (0.388); and 'taken something from a store without paying for it' and 'stolen something worth more than $50' (0.423).

All of the pairings have very similar words in each item; however, these items may have only medium, positive correlations because of some slight differences in the language. Feeling unsafe during the day is different than feeling unsafe at night, and some may believe that feeling unsafe during the day is a bit more worrisome because this

seems to imply that the neighborhood is unsafe at all times whereas being afraid of the dark or being afraid to go outside at night are more common feelings among the general population.

Not being able to think in the home vs. the home is like a zoo seem similar but perhaps the medium, positive correlation is because not being able to think may be because of a number of things – like being worried about other things (stressors) that have nothing to do with the activity or chaos in the home.

Getting into a serious physical fight and taking part in a group fight are also similar but the assumption can be made that in some cases the youth that got into a serious fight may have been a victim i.e. he/she was attacked, whereas taking part in a group fight may mean that the youth was actively involved in the fight.

The item correlation of 'hurt someone badly enough to need bandages or medical care' and 'taken part in a group fight' also has a medium, positive item correlation. These items seem like they go together however, the youth may have hurt someone in a car accident and not in a fight. This is definitely different than being an active participant in a fight. The same explanation could be made for the only large, positive item correlation in the study between 'gotten into a serious physical fight' and 'hurt someone badly enough to need bandages or medical care'.

Lastly, 'taken something from a store without paying for it' and 'stolen something worth more than $50' are also very similar, but stealing something worth more than $50 can mean that the youth stole something from a sibling or parent at home or, perhaps the youth took their parent's or caregiver's car without asking.

Without further testing, there is no way to know all of the possibilities when looking at correlations of actions, thoughts or beliefs of a sample or population, whether large or small. There will always be differences among the sample participants that cannot be parsed out by answering just a few questions.

Research Question 2

Which item has the strongest factor loading for each of the eleven factors?

> **Hypothesis 2.** The items with the strongest factor loadings for each of the eleven factors will be the items that address direct victimization of the child.
>
> **Hypothesis 2 is partially supported by the study findings.** All but two of the strongest factor loadings included direct victimization of the child. Victimization Type: Neglect and Pathways to Polyvictimization Three: Having a non-chaotic, non-multi-problem family environment did not include direct victimization of the child.
>
> **Factor Loadings**. Factor loadings were first completed for the seven

victimization types. Table 4 includes the item and factor names and Table 5 includes the estimates for each factor loading. The item with the lowest factor loading for all of the factors in the model was 0.206 for the item 'gotten into a serious physical fight' which falls under the Polyvictimization Pathway Four: Child has emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself (PP4EP). However, this item failed to reject the null that all factors in the model are equal to 0 ($p < .05$), which means the range of value is too large to say it's negative or positive so it will not be discussed further.

The factor loadings for the Victimization Types were completed first. The two items assigned to the Victimization Type: Psychological, Physical or Emotional Abuse during Home Visit (PVPEV) factor had the same factor-loading estimate. These two items were 'PCG scolded, derogated, or criticized youth' and 'PCG shouted at youth' (both items were observed during the researcher's home visit). The item with the highest factor loading for the Victimization Type: Psychological/Emotional and Physical Abuse (PVPEPA) factor PCG 'hit or slapped youth in past year'. The item with the highest factor loading for the Victimization Type: Victimization Type: No assault no weapon (PVAN) factor was 'got into serious physical fight'.

Lastly, the item with the highest factor loading for the Victimization Type: Bullying, Emotional Bullying and Theft (PVB) factor was 'kids at school hit you or threaten to hurt you physically'. This was also the item with the highest factor loading for all eleven factors in the model. These factor-loading items for the aforementioned Victimization Type factors were grouped together because they all highlight psychological, physical and emotional abuse, either at the hands of the parent or caregiver or by classmates.

A longitudinal study examined the cumulative effects of physical child abuse and environmental stressors on adult depressive symptoms among a sample of approximately 350 children that were followed into adulthood found that "cumulative measures of physical child abuse and environmental stress each independently predicted a higher likelihood of adult depressive symptoms" (ß = .122, p < .01 and ß = .283, p < .001, respectively; Sousa et al., 2018, p.180). And, according to the CDC, child abuse and

neglect can lead to poor physical and mental health as well as physical, psychological, behavioral and economic consequences well into adulthood (CDC, 2018).

The two items assigned to the Victimization Type: Witness to Domestic Violence (PVWD) factor had the same factor-loading estimate. Those items were 'had physical fight with spouse/partner in front of youth in past year' and 'spouse/partner seriously hurt you in front of youth since last interview'. The item with the highest factor loading for the Victimization Type: Witness to Assault with and without a Weapon (PVWW) factor was 'frequency (youth) saw person get hit, slapped, punched in past year'.

Similar to the effects of child abuse and neglect, witnessing domestic violence and assault has detrimental cognitive, behavioral, and emotional effects. Children who witness violence in the home and children who are abused are at greater risk for suffering from anxiety and depression, as well as exhibiting aggressive and negative behaviors such as fighting, bullying, lying, or cheating (Stiles, 2002).

The item with the highest factor loading for the Victimization Type: Neglect (PVNG) factor 'telephone disconnected because not enough money in past year'. The fact that this item had the highest was quite surprising. However, for people that have a low socioeconomic status, having utilities like gas and electric disconnected or not having access to a phone due to lack of income presents a problem, especially for vulnerable families with children.

Since 1985, the U.S. federal government has offered a discounted phone service program called Lifeline for eligible U.S. citizens that are at or below 135% of the Federal Poverty Level. The goal of the program is to "ensure that all Americans have the opportunities and security that phone service brings including being able to connect to

jobs, family and emergency services; and, to ensure that these consumers can afford 21st century broadband", which is a particularly common problem in rural areas across the country (Federal Communications Commission, 2017).

Next, factor loadings for the four pathways to polyvictimization were completed. The item with the highest factor loading for the Polyvictimization Pathway One: Residing in a dangerous community (PP1DC) factor was 'gangs are a problem in this neighborhood.' This high factor loading is not surprising. The assumption can be made that most people do not want gangs in their neighborhood.

Gang violence is a public health issue. Gang activities result in dozens of deaths per year, as well as hundreds of injuries. Additionally, gang violence affects not only gang members and other youth, but in communities where there is heavy gang activity, people living in those communities experience chronic stress and mental health problems that can lead to other chronic diseases. And, youth involved in gangs usually are involved in risky behaviors i.e. drug abuse and high-risk sexual activities (CDC, 2018). Another assumption can be made that parents and caregivers of youth do not want to see their child or adolescent go down the wrong path.

The item with the highest factor loading for the Polyvictimization Pathway Two: Living in a dangerous family (PP2DF) factor was PCG 'sold drugs, prostituted, or hustled past year'. Children of drug users and sex workers can face unique risks, stigma and discrimination. Experts also identify the risk of children developing deviant behaviors in the sphere of their sexual life, as future adults (Beard, et al., 2010). Additionally, experts identified that prostitution is often transmitted from parent to child, because of tradition

in some cases or because of a real or perceived lack of options. The risk for children becoming victimized in this way is a genuine possibility (Beard et al., 2010).

The item with the highest factor loading for the Polyvictimization Pathway Three: Having a non-chaotic, non-multi-problem family environment (PP3CF) factor was 'PCG's poverty category at 15-years old' (meaning the caregiver's poverty category during the time the youth was 15 years old). As mentioned earlier in the paper, the factor had to be reversed because the factor moved in a positive direction. Therefore, the interpretation for this factor is that the higher a family's income is above the poverty level i.e. 300% over the poverty level, the less chaotic and the less problems a family should have.

Lastly, the item with the highest factor loading for the Polyvictimization Pathway Four: Child has emotional or behavioral problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself (PP4EP) factor was 'youth threatens people'. Many children act out from time to time but when the actions or behaviors of a child at home, in school or with peers intensify, become sever or persist, a child should see a health care provider. The child might be diagnosed as having Operational Defiant Disorder, a mental health disorder that may include being angry, losing one's temper, being resentful or spiteful, being unable to take responsibility for one's actions, etc. (CDC, 2018).

Conduct Disorder is another mental health disorder that may include breaking serious rules that could lead to arrest, running away, being aggressive, fighting, bullying, threatening, being cruel to animals, etc. (CDC, 2018; Barry, Frick, Golmaryami, and Rivera-Hudson, 2013). Serious behavior issues, even if there is not a mental health

diagnosis, are very serious. Children could hurt others, hurt themselves or be at more risk for polyvictimization. Because of these very harmful risks, the very high estimate for this item is not surprising.

Research Question 3

What is the strength and direction of the correlation between the eleven theoretical factors (the four polyvictimization pathways and the seven victimization types)?

Hypothesis 3. There are strong correlations between each of the eleven theoretical factors.

Hypothesis 3 is not supported by the study findings. The null hypothesis of no relation between factors ($p < .05$) was not rejected by 29 factor correlations, which is approximately 45% of the correlations in the hypothesized polyvictimization measurement model. This means that it was not possible to estimate the direction and strength of the relationships as different from 0 between 45% of the factor pairings. Therefore, Hypothesis 3 was not supported by the data findings.

Factor correlations. Factor correlations were analyzed for all eleven factors in the model (Table 5). Correlations for the seven victimization types were examined first. There were 36 factor correlations that rejected the null hypothesis of no relation between factors ($p < .05$). There were 29 factor correlations that failed to reject the null ($p > .05$); the range of value for these 29 items was too large to establish if the item had a positive or negative correlation with the other factors in the model.

The factor correlations in the current study were operationally defined as small ($\leq$ 0.299), medium (0.300 - 0.499) and large (≥ 0.500) effect size (ES). Medium ES

"represents an effect likely to be visible to the naked eye of a careful observer; small ES is noticeably smaller than medium but not so small to be trivial, and large ES is the same distance above medium as small was below it" (Cohen, 1992, p. 156).

Nine factor correlations in the Victimization Type factors had a small effect size. One factor correlation in the Pathways to Polyvictimization factors had a small effect size. Fourteen factor correlations in the Victimization Type factors had a medium effect size. Five factor correlations in the Pathways to Polyvictimization factors had a medium effect size. Seven factor correlations in the Victimization Type factors had a large effect size and there were no large effect sizes among the Pathways to Polyvictimization factors.

There were three factor correlations that had small, positive effect sizes: PVPEPA had a small, positive correlation with 'Victimization Type: Witness to Assault with and without a weapon' (PVWW); PVPEPA had a small, positive correlation with 'Victimization Type: Bullying, Emotional Bullying, and Theft' (PVB), and PVB had a small, positive correlation with PP4EP.

The small size conveys that there is a relationship between the factors but that relationship is not strong. The three factor correlations are positively related which means that if one factor increases, the other factor increases. It is not surprising that the psychological, emotional and physical abuse factor is positively correlated with both the youth witnessing assaults (with or without a weapon) and with bullying, emotional bullying and theft.

It is also not surprising that the bullying factor had a positive relationship with polyvictimization pathway four, which addresses children with emotional problems that

may put them at increased risk for victimization. This victimization may include physical fights, bullying, harassing, etc. However, it is surprising that the relationship between these factors is small. Perhaps the strength of the relationship changes depending on the circumstance i.e. if the child is a victim during an incident or if the child is the perpetrator in the incident.

Also, these specific victimization types and polyvictimization pathways are comprised of a number of separate issues. PVPEPA is a combination of two different victimization types and PVB is a combination of three different victimization types. The victimization represented in these victimization types is physical as well as psychological and emotional; there is quite a bit of multiplicity within these factors. Perhaps the correlations would have been stronger if those factors would have remained separate.

There were five small, negative factor correlations. The Psychological/Emotional Abuse during the Home Visit Victimization type (PVPEV) had a small, negative correlation with the 'Victimization Type: Psychological/Emotional and Physical Abuse' (PVPEPA); PVPEPA had a small, negative correlation with 'Victimization Type: Neglect' (PVNG); PVPEPA had a small, negative correlation with 'Polyvictimization Pathway One: Residing in a Dangerous Community' (PP1DC); PVNG had a small, negative correlation with PVAN (No Assault, No Weapon); PVNG had a small, negative correlation with PP4EP and PVB had a small, negative correlation with PP1DC.

Again, the small size conveys that there is a relationship between the factors but the relationship is not strong. These factor correlations are also negatively related which means that if one factor increases, the other factor decreases. The results of these five factor correlations as written are quite surprising. It would seem that psychological,

emotional, and physical abuse; neglect, assault, bullying, a dangerous community and children with emotional or behavioral issues that put them at increased risk for victimization would be strongly and positively correlated. However, similar to what was discovered in the factor loadings analysis, some of the questions in the Fragile Families and Child Wellbeing database used reverse measures i.e. an item was measured on a scale of 1 to 2: 1 was yes and 2 was no. However, another item was also measured on a scale of 1 to 2 but 1 was no and 2 was yes. This is true regardless of scale language such as yes and no, true and untrue, never and always, etc. These are inverse relationships; when the measures are reversed and analyzed correctly, all of the correlations are positively related but the strength does not change.

Five factors had medium, positive correlations with six other factors in the hypothesized polyvictimization measurement model. The medium effect size means that the change or increase in the factor values is visible or noticeable. There is a stronger, positive relationship between these factors than there is between the factors with small effect sizes.

PVPEPA had a medium, positive correlation with 'Victimization Type: Assault with No Weapon' (PVAN); PVNG had a medium, positive correlation with PP1DC; PVNG had a medium, positive correlation with PP3CF; PVWW had a medium, positive correlation with PVAN; and, PVWW had a medium, positive correlation PP2DF. Four out of the five factor correlations seem plausible – physical, psychological and emotional abuse should positively and strongly correlate with assault, neglect witness to assault and living in a dangerous family. However, the positive factor correlation between neglect and a non-chaotic family does not seem plausible. The less chaotic a family is, the less

neglect there should be. This was another case where the answers in the database were reversed. When analyzed correctly, neglect does increase when a child lives in a chaotic family and it is decreased when the child lives in a less chaotic environment.

Eight factors had medium, negative correlations with eight other factors in the hypothesized polyvictimization measurement model. There is a stronger negative, relationship between these factors than there is between the factors with small effect sizes. PVPEPA had a medium, negative correlation with Pathway Two: Living in a dangerous family (P2DF); PVPEPA a medium, negative correlation with PP3CF; PVWD had a medium, negative correlation with PP4EP; PVNG had a medium, negative correlation with PVWW; PVWW had a medium, negative correlation with PP2DF; PVWW had a medium, negative correlation with and PP3CF; PVAN had a medium, negative correlation with PP1DC; and, PVAN had a medium, negative correlation with PP3CF. Again, the answers in the database were reversed so in reality, these are medium, *positive* correlations. Physical, psychological, and emotional abuse positively correlate with the youth being a witness to violence and domestic violence, assault, and living in a dangerous family.

The following five victimization types had large, positive correlations. Large correlations mean that the relationship between factors is very strong. PVPEPA had a large, positive correlation with PP4EP; PVWD had a large, positive correlation with PP2DF; PVNG had a large positive correlation a large, positive correlation with PP2DF; PVAN had a large, positive correlation with PP2DF; PVAN also had a large, positive correlation with PP4EP.

These five factor correlations make theoretical sense. Psychological, emotional and physical abuse, assault, witnessing domestic violence, neglect, living in a dangerous family, being a child with emotional or behavioral problems that is at increased risk for victimization should all be positively correlated as demonstrated in the hypothesized polyvictimization measurement model.

The victimization type PVPEV had a large, negative correlation with PP4EP and PVWW had a large, negative correlation with PP1DC. PVPEV identifies psychological and emotional abuse in the home during a home visit and PP4EP is a child with emotional and behavioral issues, so this does not make theoretical sense. But, as a public health nurse, the author believes that more frequent home visits by public health nurses, social workers or other providers would be beneficial for the family of a child with emotional or behavioral issues. Lastly the strong, negative relationship between PVWW (witness to assault) and PP1DC (living in a dangerous community) also does not seem theoretically plausible. There would be more (not less) opportunities to witness assaults in a dangerous community. Again, the answers in the database were reversed, so in reality, these large, negative correlations are actually large, *positive* correlations.

The factor correlations for the pathways to polyvictimization were also examined. A total of six factor correlations rejected the null hypothesis of no relation between factors ($p < .05$). PP1DC had a small, negative correlation with PP4EP. These answers were also reversed in the database. It makes theoretical sense that dangerous community with its potential risk factors i.e. gangs, access to drugs, guns, etc. would not be favorable to a child with emotional problems or behavioral issues especially because the child is already at risk of becoming victimized.

PP1DC had a medium, positive correlation with PP2DF; PP1DC had a medium, positive correlation with PP3CF; and, PP2DF had a medium, positive correlation with PP3CF. The first factor correlation may be plausible in some situations, but it seems careless to assume that living in a dangerous community means that the child also lives in a dangerous family. The second correlation does not make theoretical sense; living in a dangerous community does not correlate with being a part of less chaotic family. However, if the pathway to polyvictimization three had not been reversed, the correlation could possibly be plausible but again, the assumption should not be made that living in a dangerous community correlates with living in a chaotic family.

PP2DF had a medium, negative factor correlation with PP4EP; and, PP3CF had a medium, negative correlation with PP4EP. Again, the first factor makes no theoretical sense. Again, these answers from the database were also reversed. A dangerous family puts a child with emotional or behavioral problems at more risk; and, a chaotic home life is not conducive for a child with emotional or behavioral issues.

Although most of the factor correlations discussed in this data analysis were positive and theoretically plausible, there can still be outliers. Individuals in the sample population may not always behave like one would expect the general population to behave because they are unique human beings.

Research Question 4

Are the four pathways to polyvictimization predictors of the seven victimization types (with regression weights different from zero)?

Hypothesis 4. The four pathways to polyvictimization are strong predictors of the seven victimization types.

Hypothesis four was not supported by the study findings. There are only one or two of the four pathways to polyvictimization predictors assigned to the victimization type factors that were able to reject the null that regression is equal to 0 (p < .05). And, there were no pathways assigned to Victimization Type: Witness to Domestic Violence. Therefore, the study findings do not support the hypothesis that the four pathways to polyvictimization are strong predictors of all seven victimization types.

Regression Model

Regression analysis was conducted for the current study. This method goes beyond correlation by adding prediction capabilities and examining the relationship between factors. Regression analysis also measures the strength and direction of the predictor pathways. In this study, regression was used to examine if the four pathways to polyvictimization were unique predictors of the seven victimization types in the hypothesized polyvictimization measurement model (Table 6). There were eight instances where the null hypothesis that regression is equal to 0 (p < .05), was rejected.

The regression analysis found that the Polyvictimization Pathway Four predictor: (Child has emotional problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself) was able to strongly predict the Victimization Type: (Psychological and Emotional Abuse During the Home Visit). And, the pathways to polyvictimization predictors in the hypothesized polyvictimization measurement model shared approximately 31% of the variance with the other pathways to polyvictimization predictors representing Victimization Type: (Psychological and Emotional Abuse During the Home Visit).

This suggests that each of the four pathways to polyvictimization predictors assigned to Victimization Type: (Psychological and Emotional Abuse During the Home Visit) has something in common above and beyond the victimization type factor that they are assigned to. The percentage of 31% is considered to be a strong approximation. This indicates that the pathway to polyvictimization predictors assigned to Victimization Type: (Psychological/Emotional and Physical Abuse) have a relationship, even when they are not assigned to the same factor. This factor correlation is theoretically sound. A child with emotional and behavioral issues would have a higher risk of psychological and emotional abuse in the home.

The regression analysis found that the Polyvictimization Pathway Four predictor: (Child has emotional problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself) was able to predict the Victimization Type: (Psychological/Emotional and Physical Abuse). And, the pathways to polyvictimization predictors in the hypothesized polyvictimization measurement model shared 35% of the variance with the other pathways to polyvictimization predictors representing Victimization Type: (Psychological/Emotional and Physical Abuse).

This suggests that each of the four pathways to polyvictimization predictors assigned to Victimization Type: (Psychological/Emotional and Physical Abuse) has something in common above and beyond the victimization type factor that they are assigned to. The percentage of 35% is considered to be a strong approximation; in some cases a 20% approximation is considered strong. This indicates that the pathway to polyvictimization predictors assigned to Victimization Type: (Psychological/Emotional and Physical Abuse) have a relationship, even when they are not assigned to the same

factor. This correlation also seems theoretically plausible. A child with emotional and behavioral issues would have a higher risk of psychological, emotional and physical abuse.

The regression analysis also found that the Polyvictimization Pathway Two predictor (Living in a Dangerous Family) was able to strongly predict the Victimization Type (Neglect) and the Polyvictimization Pathway Three predictor (Having a non-chaotic, non-multi-problem family environment) was able to predict the Victimization Type (Neglect). The pathways to polyvictimization predictors in the hypothesized polyvictimization measurement model shared approximately 42% of the variance with the other pathways to polyvictimization predictors representing Victimization Type (Neglect).

This suggests that each of the four pathways to polyvictimization predictors assigned to Victimization Type (Neglect) has something in common above and beyond the victimization type factor that they are assigned to. The percentage of 42% is a strong approximation. This indicates that the pathway to polyvictimization predictors assigned to Victimization Type (Neglect) have a relationship, even when they are not assigned to the same factor.

It is also plausible that the factor correlation of living in a dangerous family, especially one where there is drug or alcohol abuse, is linked to neglect. However, the correlation between living in a less chaotic home and increased neglect does not seem theoretically plausible. But, similar to other items and factors in the theoretical model. The answers from the Fragile Families and Child Wellbeing were also reversed in this correlation.

The regression analysis also found that the Polyvictimization Pathway One predictor (Residing in a Dangerous Community) was able to strongly predict Victimization Type: (Witness to Assault with and without a Weapon). And, the pathways to polyvictimization predictors in the hypothesized polyvictimization measurement model shared approximately 53% of the variance with the other pathways to polyvictimization predictors representing the Victimization Type: (Witness to Assault with and without a Weapon).

This suggests that each of the four pathways to polyvictimization predictors assigned to Victimization Type: Witness to Assault with and without a Weapon has something in common above and beyond the victimization type factor that they are assigned to. The percentage of 53% is a strong approximation. This also indicates that the pathway to polyvictimization predictors assigned to Victimization Type: Witness to Assault with and without a Weapon have a strong relationship, even when they are not assigned to the same factor. This correlation of living in a dangerous community and witnessing assaults is definitely plausible.

The regression analysis found that the Polyvictimization Pathway One (Residing in a Dangerous Community) was able to weakly predict the Victimization Type: (Bullying, Emotional Bullying and Theft). The Polyvictimization Pathway Four predictor: (Child has emotional problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself) was also able to predict the Victimization Type: (Bullying, Emotional Bullying and Theft). The pathways to polyvictimization predictors in the hypothesized polyvictimization measurement model shared approximately 11% of the variance with the other pathways to polyvictimization

predictors representing the Victimization Type: (Bullying, Emotional Bullying and Theft).

This suggests that each of the four pathways to polyvictimization predictors assigned to Victimization Type: (Bullying, Emotional Bullying and Theft) has very little in common above and beyond the victimization type factor that they are assigned to. The percentage of 11% is a weak approximation. This indicates that the pathways to polyvictimization predictors assigned to Victimization Type: (Bullying, Emotional Bullying and Theft) have a weak relationship when they are not assigned to the same factor.

The correlation between living in a dangerous community and bullying seems plausible but it is very weak which doesn't seem to match any theory related to violence in the community and the risk factors of a child being victimized by things like bullying and theft; however, the Victimization Type: (Bullying, Emotional Bullying and Theft) was a combination of three factors so perhaps there is too much variation in the combined factor. Also, bullying in the Fragile Families and Child Wellbeing database was in relation to attending school only so, living in a dangerous community and being in school may not be compatible in this instance.   This factor correlation would benefit from additional testing.

Lastly, the regression analysis found that the Polyvictimization Pathway Four predictor: (Child has emotional problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself) was able to strongly predict the Victimization Type: (Assault with No Weapon). And, the pathways to polyvictimization predictors in the hypothesized polyvictimization measurement model

shared approximately 56% of the variance with the other pathways to polyvictimization predictors representing the Victimization Type: Victimization Type (Assault with No Weapon).

The percentage of 56% is a strong approximation. This indicates that the pathways to polyvictimization predictors assigned to Victimization Type: (Assault with No Weapon) have a strong relationship, even when they are not assigned to the same factor. This factor correlation is theoretically sound. A child with emotional or behavioral issues is definitely at risk of being assaulted by parents or caregivers, classmates, or peers.

Regression analysis was also completed for Victimization Type: Witness to Domestic Violence but none of the pathways to polyvictimization predictors assigned to this Victimization Type rejected the null hypothesis that regression was equal to 0 ($< .05$) However, the proportion of variance for Victimization Type: Witness to Domestic Violence was 0.371. This indicates that the pathways to polyvictimization predictors in the hypothesized polyvictimization measurement model shared approximately 37% of the variance with the other pathways to polyvictimization predictors representing Victimization Type: Witness to Domestic Violence.

This also suggests that each pathways to polyvictimization predictor assigned to Victimization Type: Witness to Domestic Violence has something in common above and beyond the victimization type factor that they are assigned to. The percentage of 37% is considered to be a strong approximation; in some cases even a 20% approximation is considered strong. The percentage of 37% indicates that the pathway to polyvictimization

predictors assigned to Victimization Type: Witness to Domestic Violence have a relationship, even when they are not assigned to the same factor.

R^2. There was an average R^2 (proportion of variance) of 0.380, with a range of 0.119 to 0.561 among the seven victimization type factors. This indicates that the pathways to polyvictimization predictors in the hypothesized polyvictimization measurement model shared approximately 38% of the variance with the other pathways to polyvictimization predictors representing the respective victimization type factor.

This also suggests that each pathways to polyvictimization predictor assigned to each victimization type factor has something in common above and beyond the victimization type factor that they are assigned to. The percentage of 38% is considered to be a strong approximation; in some cases a 20% approximation is considered strong. This indicates that the pathway to polyvictimization predictors have a relationship, even when they are not assigned to the same factor.

Without further testing, there is no way to know all of the possibilities when looking at correlations of actions, thoughts or beliefs of a sample or population, whether large or small. There will always be differences among the sample participants that cannot be parsed out by answering just a few questions.

Relationship Between the Findings and the Theoretical/Conceptual Frameworks

The findings of the current study are in line with both the structure of the Social-Ecological Model and the conceptualization of the four pathways to polyvictimization. The items tested in the hypothesized polyvictimization model highlighted each of the four influencing systems of the Social-Ecological Model. The Social-Ecological Model and

the Pathways to Polyvictimization model were combined in an adapted Social-Ecological
Model (Figure 3).

Figure 3

MACROSYSTEM =
SOCIETAL

PATHWAY TO
POLYVICTIMIZATION
ONE

EXOSYSTEM =
COMMUNITY

PATHWAY TO
POLYVICTIMIZATION
ONE

MESOSYSTEM =
RELATIONSHIPS

PATHWAYS TO
POLYVICTIMIZATION
TWO AND THREE

MICROSYSTEM =
INDIVIDUAL

PATHWAY TO
POLYVICTIMIZATION
FOUR
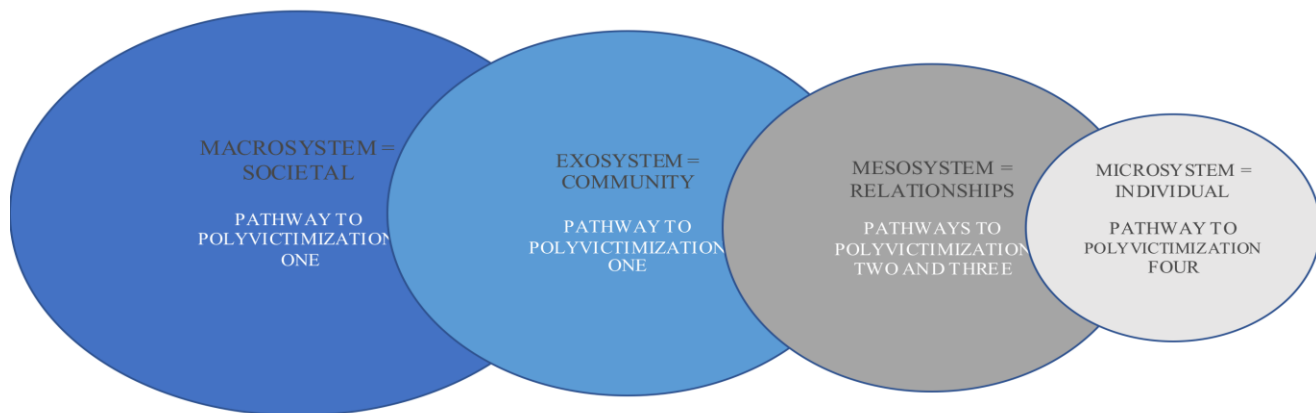
Adapted Social-Ecological Model Combined with Pathways to Polyvictimization Model

The first influencing system is the microsystem, which contains factors in an
individual's biological and personal history that increase the possibility of the individual
becoming polyvictimized. In the current study, Pathway Four: Child has emotional or
behavioral problems that increase risk behavior, engender antagonism, and compromise

the capacity to protect oneself aligns with the microsystem of the Social-Ecological

Model because it has elements that are characteristic of an individual's biological and

personal history that increases the possibility of the child becoming polyvictimized. The

Fragile Families and Child Wellbeing data set included items that examined the youth's

anger, depression and anxiety that were used in the current study.

The second influencing system of the Social-Ecological Model is the mesosystem,

which contains factors within the individual's closest relationships including family

members, social peers and intimate partners that may increase the individual's risk of

polyvictimization. Pathway Two: Living in a dangerous family pathway which includes

witnessing family violence, frequent arguments in the home and all types of maltreatment

aligns with the mesosystem of the Social-Ecological Model because it has elements that

are characteristic of the factors within the child's closest relationships that can increase

their risk of becoming victims. The Fragile Families and Child Wellbeing data set

included items about physical and emotional and other maltreatment that were included

in the hypothesized polyvictimization measurement model.

Pathway Three: Having a non-chaotic, non-multi-problem family environment

from the pathways to polyvictimization model also aligns with the mesosystem of the

Social-Ecological Model. The pathway includes twelve indicators of possible stressors or

disruptions within a child's household. The Fragile Families and Child Wellbeing data

set included items that related to many of the stressors indicated in Pathway Three, which

were included in the hypothesized polyvictimization measurement model.

The third influencing system in the Social-Ecological Model is the exosystem

includes factors at the community level, such as relationships with schools and

neighborhoods that may increase the individual child's risk of becoming victimized. And, the fourth influencing system in the Social-Ecological Model is the macrosystem, which includes societal or cultural norms that create an environment that accepts or condones violence or inequality.

Both the exosystem and the macrosystem of the Social-Ecological Model align well with Pathway One: Residing in a dangerous community. The indicators included in Pathway One include school violence, neighborhood violence and residing in a large city. Stress from exposure to multiple forms of violence and victimization in society are significant factors in both influencing systems. All participants from the Fragile Families and Child Wellbeing study live in large cities (Table 1). Items in this data set included information about neighborhood violence as well as school violence and were included in the hypothesized polyvictimization measurement model.

The Social-Ecological Model (Bronfenbrenner, 1986) was selected for the current study as the most useful theoretical framework to apply to the polyvictimization of children and youth because of its applicability to complex problems. The model uses a multi-level systems approach for considering the mistreatment of children and consists of micro and macro system levels. This model combined with the pathways to polyvictimization model places the victim at the center, which is consistent with applying a patient-centered or in the case of polyvictimization, victim-centered approach to intervention with victims of polyvictimization. This adapted model was proven to be a successful foundation for the current study and will be useful as a framework for assessing polyvictimization in children and adolescents at every micro and macro system level.

Implications for Nursing Practice, Education, & Research

The ultimate goal of public health is prevention, which should also be the ultimate goal of all nurses and other health care providers. Bronfenbrenner's Social-Ecological Model can be used as a framework for prevention of victimization among children. Understanding the factors underlying victimization is the first step. The complexity of the child's personal, community and societal relationships must be examined in order to develop effective prevention strategies for polyvictimization. Risk factors among vulnerable children must also be identified. Efforts at the individual level should promote attitudes and behaviors that prevent victimization, including education and programs that focus on self-empowerment and other positive life skills.

The second level examines the child's close relationships. These close relationships among family members, peers, and significant others may increase the risk of becoming polyvictimized or becoming a perpetrator. Prevention at this level should include strategies that include parenting or family-focused prevention programs, and mentoring and peer programs that are aimed at reducing conflict, promoting problem-solving skills, and fostering healthy relationships (CDC, 2009).

Prevention at the community level should include school policies that are aimed at reducing peer-to-peer victimization, including bullying, as well as reducing the social isolation that many polyvictimized children may face. Efforts must also be made by local governments, businesses and community organizations to improve economic opportunities and housing conditions in neighborhoods so that children can remain safe at home. The fourth level examines broad societal factors that can either help to create or prevent a climate where violence, and therefore victimization, is encouraged. It is

important to try to changes these accepted social and cultural norms and promote a

society where resolving conflict and eliminating economic and social inequities becomes

the norm.

Limitations of the Study

This study utilized secondary data. There are numerous advantages to using

secondary data but there are also some disadvantages. A major disadvantage of using

secondary data is that this data may not answer all of the researcher's specific research

questions. Additionally, the data may not contain specific information that would be

important to the researcher's study (Doolan & Froelicher, 2009). Since the researcher

has not collected the data, there is no control over what is contained in the data set.

Another disadvantage of using secondary data is that the researcher does not know

exactly how the data collection process was completed or how much consistency there

was in that process. The Fragile Families and Child Wellbeing dataset had a lot of

missing data because many questions on the interview forms were omitted during the

interviews with both the children and the parents or caregivers.

Some of the variables the researcher wanted to use were missing from the Fragile

Families and Child Wellbeing dataset. For instance, there were very few variables that fit

into the fourth pathway to polyvictimization, which was described as 'child has

emotional or behavioral problems that increase risk behavior, engender antagonism, and

compromise the capacity to protect oneself.' This was one of the reasons that the seven

victimization types were added to the hypothesized pathways to polyvictimization model.

Additionally, the variables in the Fragile Families and Child Wellbeing dataset were defined and categorized differently than the variables in the four pathways to polyvictimization, and many of the answers in the database were inversely related. The author should have reverse-coded the answers so that the item and factor correlations went in the same positive direction.

Another major issue of the current study was the use of the hypothesized concept of the four pathways to polyvictimization. There was not a clear measure or threshold to define what makes someone polyvictimized or not polyvictimized. In some of the literature from Finkelhor, the threshold for polyvictimization was four or more types of violence and in other resources, the threshold for polyvictimization was five or more types of violence. There was also some confusion regarding the actual definition for polyvictimization because poly-victims could be victims in multiple ways and they also could be victims in multiple stages of development.

There were questions related to the psychometrics used to validate the Juvenile Victimization Questionnaire. The psychometrics used were out of date and not sufficient to support reliability and validity and national norms. There was no mention of a proper method to create cut-off values and the tests were based on classical test theory. The authors seemed create cut-offs based on how the data 'looked' to them and by categorizing them based on mean which is not a proper method because there is not technical criteria for creating cut-offs by categorizing them by.

Suggestions for Future Research and Implications for Vulnerable Populations

More Confirmatory Factor Analyses should be conducted utilizing the hypothesized polyvictimization measurement model in this study. This model had good

fit indices and was found to have the potential to be an accurate measurement model to assess for polyvictimization among children, but some of the chosen items in the model had potential problems. More research could help to improve the hypothesized polyvictimization measurement model in this study. More testing of either model can further test for validity (which implies the extent to which the research instrument or model measures what it is intended to measure) and reliability (which refers to the degree to which the scale or model produces consistent results, when repeated measurements are made). The author of this current study would also like to duplicate this study with different groups of community members in Milwaukee, the author's hometown.

In fact, it would be important to conduct more Confirmatory Factor Analyses and additional research designs and methods on this hypothesized polyvictimization measurement model with many different populations i.e. populations with different socioeconomic status (SES); populations in rural areas (the Fragile Families and Child Wellbeing Study was completed in U.S. cities with $\geq$ 200,000 residents); immigrant populations (especially undocumented immigrants and migrant workers); populations with physical and mental disabilities; the LGBTQ population, etc.

It is also important to look at the opioid epidemic and polyvictimization – not only the children that are affected by the epidemic but parents/caregivers and other adults that were affected by illegal and/or prescription drug addiction in childhood or are currently affected because of personal use or the use of other people that have close relationships with i.e. spouses, partners, children, etc. It is also important to note that before the opioid epidemic gained so much attention and so much national/federal support for treatment, there was the crack epidemic of the 80's and 90's which was swept

under the rug – the rug that now lays on the floors of thousands of prison cells, especially those filled with African American males.

Prison was the solution for that epidemic which sadly affected and still disproportionately affects racial and ethnic minorities. For example, Milwaukee accounts for 70% of Wisconsin's total black population. From 1990 to 2012, approximately 26,000 black men from Milwaukee County alone had been incarcerated—which means that more than half of all African-American men in their thirties and early forties in Milwaukee County have at some point been incarcerated in state correctional facilities (Pawasarat & Quinn, 2013). In 2012, in the 53206 zip code, which is 95% black and has the highest incarceration rate in the country, nearly every residential block has multiple numbers of ex-offenders with prison records (Pawasarat & Quinn, 2013).

All of the populations mentioned above are already considered vulnerable or have the potential to be vulnerable. Vulnerable populations include children, elderly, racial or ethnic minorities, the socioeconomically disadvantaged, the uninsured or underinsured, those with certain medical conditions, immigrants, the LGBTQ community, etc. The most vulnerable in society should become the priority and be given the utmost care. Greater understanding of the needs of vulnerable populations may be the first toward changing policies that disadvantage disparate populations. Nurses, other health care providers, community organization, business and other advocacy groups should join together to raise awareness, provide education, publish guidelines and define goals and provide care for vulnerable populations in local communities.

Conclusion

The current study tested a hypothesized polyvictimization measurement model and found that the model is potentially an accurate measurement model to assess for victimization among vulnerable children. Although this 11-factor model needs further testing, it can still be used in its present form as a guideline for the development of an assessment tool for polyvictimization. This tool could be useful nurses, health care providers, social workers, teachers, researchers, and others who care for children, in both community and acute care settings. Victimization of children often goes undetected and persists over long periods of time. Children who experience victimization, including polyvictimization, need to be identified because they are at particularly high risk of additional victimization and traumatic psychological effects that can last a lifetime.

Nurses and other health care professionals need to be able to identify children on the path to polyvictimization or those children who are already experiencing victimization so that they can develop, implement and disseminate prevention resources for children and families. The key is prevention and we must prevent vulnerable children from becoming polyvictimized. The first step is to identify these children. The hope is that this hypothesized polyvictimization measurement model will one day be able to assist in this identification.

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Appendix A: **Psychometrics of the Juvenile Victimization Questionnaire**

Data on victimization experiences were obtained using the Juvenile Victimization Questionnaire (JVQ) was developed as a comprehensive, developmental approach to assess crime, child maltreatment, and other kinds of victimization experiences during childhood. It attempts to fill a need created by a burgeoning clinical and research interest in the epidemiology and impact of these experiences.

The JVQ was designed to be a more comprehensive instrument than other instruments that targeted one or very few types of victimization. The instrument covers a wide variety of events including non-violent victimization and events that children and parents/primary caregivers do not typically conceptualize as crimes (Finkelhor et al., 2005). It screens for 34 specified victimization types that cover the general areas of concern, which include Conventional Crime, Child Maltreatment, Peer and Sibling Victimization, Sexual Victimization, and Witnessing Victimization/Indirect Victimization (Finkelhor et al., 2004, p. 318).

The JVQ covers most types of victimization events and includes a great variety of locations and perpetrators (Hamby & Finkelhor, 2001; Hamby, Finkelhor, Ormrod, & Turner, 2004). The JVQ is also applicable in a variety of settings including for use with children and youth involved in the juvenile justice system, children and youth being evaluated for depression, anxiety, or traumatic symptomatology, school counseling including the evaluation of bullying, social isolation, and school failure, and the evaluation of children referred because of some known victimization episode, such as sexual abuse or witnessing of domestic violence.

Prior to its use in Finkelhor's original survey to measure polyvictimization, the JVC was tested with victimization specialists, focus groups of parents and children, and

interviews with young children to determine if both its language and content were suitable (Finkelhor et al., 2005). As a result, the JVQ was found to be appropriate as a self-report questionnaire by children eight years and older by Finkelhor and his team.

According to Finkelhor, psychometric evaluation showed little confusion or resistance by the participants, good reliability and validity, and comparable information from both youth and parents/caregivers (Finkelhor et al., 2005; Hamby, Finkelhor, Ormrod, & Turner, 2004). He also found that the JVQ showed psychometric properties with an alpha of .80 and overall test-retest reliability kappas averaging .59, with the average kappa for the child self-report version being .63 (Finkelhor, Hamby, Ormrod, & Turner, 2005; Cuevas et al., 2009, p. 641). Lastly, Finkelhor found that validity was supported by moderate correlations between victimization and trauma symptoms (Finkelhor, Hamby, et al., 2005; Cuevas et al., 2009, p. 641).

Additionally, Finkelhor found that the measures of polyvictimization were validated through their ability to predict trauma symptoms because symptomatology is one of the most important correlates of and reasons for identifying polyvictimization (2005). Symptoms were measured using three scales each (anxiety, depression and anger/aggression) of two closely related instruments: the Trauma Symptom Checklist (TSCC), administered to the 10-17 year-old respondents and the Trauma Symptom Checklist for Young Children (TSCYC), for caregivers of the 2-9 year-old responds (Finkelhor et al., 2005, p. 1300).

Finkelhor concluded that all components of the TSCC showed very good reliability and validity in both population-based and clinical samples. The TSCC □□coefficients for Finkelhor's initial study to measure polyvictimization were .75 for the

anxiety subscale, .82 for the depression subscale, and .87 for the anger/aggression subscale and the TSCYC □□coefficients were .72 for the anxiety subscale, .72 for the depression subscale and .83 for the anger/aggression subscale (Finkelhor et al., 2005, p. 1301).

Finkelhor also found that the original measure of polyvictimization was a powerful predictor of trauma symptoms (anger, depression, and anxiety). In multiple regressions for younger and older children that controlled for demographic factors and other lifetime adversities polyvictimization had a standardized regression coefficient (□) equal to or greater than .30.

Except for anxiety symptoms in the 2 to 9-year-old age group, polyvictimization was more important in predicting symptom levels than was a measure of other lifetime adversities (i.e. serious illnesses, accidents, homelessness, family conflict, and the death, unemployment, substance abuse or imprisonment of family members (Finkelhor et al., 2005, p. 1302). Finkelhor also found that the inclusion of polyvictimization in the analyses either eliminated or greatly reduced the predictive power of individual types of victimization (Finkelhor et al., 2005, p. 1303).

Lastly, the results from the JVC - the original polyvictimization measure – were that many children and youth in a national sample were found to have experienced multiple types of victimization in the last year, according to Finkelhor. The mean number of victimizations identified by the JVQ among victimized children in this 1-year period was 3.0, with the range extending all the way to 15. Because of the high frequency of victimization and inclusion of many relatively less serious types of victimization in the inventory, Finkelhor and team (2005, p. 1302) defined

polyvictimization as the experience of four or more different types of victimization in different incidents in a given year (this included all children with victimization levels above the mean of 3.0). Twenty-two percent of the sample had four or more different kinds of victimizations. Further distinction was made between children with low polyvictimization (four to six victimizations), who comprised 15% of the full sample and children with high polyvictimization (seven or more victimizations), who comprised 7% of the full sample (Finkelhor et al., 2005, p. 1302).

However, as stated in the literature review of this current study, there were many limitations with the psychometrics utilized to validate the Juvenile Victimization Questionnaire (JVQ) as well as the threshold for the concept of polyvictimization. The psychometric utilized was out of date and was not sufficient enough to support reliability, validity and national norms.

Appendix B: **Documentation of IRB Status**

Jessica Rice
To: Kelli Jones   Cc: Kristin Haglund
RE: HR-1809026219 Question

September 28, 2018 at 11:02 AM
Inbox - Exchange 📁   JR

Updated contact info found in this email: Jessica Rice other fax: (414) 288-6281   update...   ⊗

Good morning Kelli,

In order for research studies conducted by MU faculty, staff or students to require review by the MU IRB, the study must meet the following 2 definitions:

1. "Research" defined as: A systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.

2. "Human subjects" defined as: a living individual about whom an investigator conducting research obtains (1) data through intervention or interaction with the individual, or (2) identifiable private information.

Based on the activities described in your IRB submission and our subsequent discussion, you are using publicly available, de-identified datasets for your research. You are not intervening or interacting with living individuals or using their identifiable private information. Therefore, your study would NOT meet the criteria for "Human Subject" and MU IRB review will not be required. Please retain this email for your records.

Please feel free to contact me with any questions or if your project changes.

Jessica

Jessica Rice, MPH, CIP
IRB Manager
Office of Research Compliance
Schroeder Complex, 102
Marquette University
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Ph. (414) 288-6298, Fax: (414) 288-6281
http://www.marquette.edu/researchcompliance/

**For more information about regulatory changes impacting research with human subjects please see the announcements section of our home page: http://www.marquette.edu/orc/irb/index.shtml

Table 2: Fragile Families and Child Wellbeing Item Identifiers

Item Name	Victimization Type and Item Question

Victimization Type: Psychological/emotional and physical abuse

p6d28	D28 – Shouted or swore at youth in past year
k6c9c	C9c – PCG shouted, yelled, screamed, swore or cursed at you
p6d29	D29 – Hit or slapped youth in past year
k6c9d	C9d – PCG hit or slapped you

Victimization Type: Psychological/emotional abuse at Home Visit

| o6e8 | E8 – PCG shouted at youth (during home visit) |
| o6e11 | E11 – PCG scolded, derogated, or criticized youth (during home visit) |

Victimization Type: Witness domestic violence

| p6g11 | G11 – Had physical fight with spouse/partner in front of youth in past year |
| p6g12 | G12 – Spouse/partner seriously hurt you in front of youth since last interview |

Victimization Type: Neglect

p6j38	J38 – Hungry because could not afford food in past year
p6j40	J40 – Evicted for not paying rent/mortgage in full in past year
p6j42	J42 – Utilities turned off because not enough money in past year
p6j45	J45 – Stayed at shelter or place not meant for housing in past year
p6j46	J46 – Someone in household did not see doctor/go to hospital because of cost
p6j47	J47 – Telephone disconnected because not enough money in past year

Victimization Type: Witness Assault with Weapon and Without Weapon

p6i14	I14 - Frequency saw person attacked with weapon in past year
p6i15	I15 - Frequency saw person shot at in past year
p6i13	I13 - Frequency saw person get hit, slapped, punched in past year

Victimization: Bullying, Emotional Bullying and Theft

k6b32b	B32b – Kids at school hit you or threaten to hurt you physically
k6b32e	B32e – Kids at school take things, like your money or lunch, without asking
k6b32a	B32a – Kids at school pick on you or say mean things to you
k6b32f	B32f – Kids at school purposely leave you out of activities

Victimization Type: Assault No Weapon

k6d61d   D61d – Gotten into a serious physical fight
k6e8   E8 – Ever been a victim of a crime
k6e22f   E22f – Officer used physical force during incident

Polyvictimization Pathway One: Residing in a Dangerous Community

p6i11   I11. Gangs are a problem in this neighborhood
p6i12   I12 – Afraid to let youth outside because of neighborhood violence
k6e2c   E2c – People in this neighborhood generally don't get along with each other
k6e2e   E2e - Gangs are a problem in this neighborhood
k6e4b   E4b – I feel unsafe walking around my neighborhood during the day
k6e4c   E4c – I feel unsafe walking around my neighborhood at night

Polyvictimization Pathway Two: Living in a Dangerous Family

p6g9   G9 – Spouse/partner has alcohol or drug use problems
p6h86   H86 – Ever used illegal drugs in past year
p6h102   H102 – Spent time in jail since last interview
p6k43   K43 – Sold drugs, prostituted, or hustled in past year
k6f81   F81 – PCG's spouse/partner uses drugs

Polyvictimization Pathway Three: Having a non-chaotic, non-multi-problem family environment

cp6povc   Constructed – PCG's poverty category at 15-years old
a

p6d13   D13 – Can't hear yourself think at home
k6c4a   C4a – You can't hear yourself think in your home
k6c4b   C4b – It's a real zoo in your home
p6d14   D14 – Home is a real zoo

Polyvictimization Pathway Four: Child has emotional problems that increase risk behavior, engender antagonism, and compromise the capacity to protect oneself

p6b35   B35 – Youth is cruel, bullies, or shows meanness to others
p6b37   B37 – Youth destroys things belonging to family or others
p6b41   B41 – Youth gets in many fights
p6b42   B42 – Youth physically attacks people
p6b44   B44 – Youth has temper tantrums or a hot temper
p6b45   B45 – Youth threatens people
p6b47   B47 – Youth can't sit still, is restless or hyperactive
p6b51   B51 – Youth lies or cheats
p6b59   B59 – Youth argues a lot

p6b60	B60 – Youth runs away from home
p6b61	B61 – Youth sets fires
p6b62	B62 – Youth steals at home
p6b63	B63 – Youth steals outside the home
p6b66	B66 – Youth is unhappy, sad or depressed
p6b67	B67 – Youth vandalizes
p6c21	C21 – Youth ever been suspended/expelled
k6d61b	D61b – Deliberately damaged property that didn't belong to you
k6d61c	D61c – Taken something from a store without paying for it
k6d61d	D61d – Gotten into a serious physical fight
k6d61e	D61e – Hurt someone badly enough to need bandages or medical care
k6d61g	D61g – Stolen something worth more than $50
k6d61h	D61h – Gone into a house or building to steal something
k6d61i	D61i – Used or threaten to use a weapon to get something
k6d61j	D61j – Sold marijuana or other drugs
k6d61l	D61l – Taken part in a group fight

Table 3: Descriptive Statistics for Fragile Families and Child Wellbeing Sample

Interview Year and Youth's Age at Time of Interview

	N	Minimum	Maximum	Mean	Std. Deviation
Interview Year	3427	2014	2017	2014.93	.623
Youth's age	3425	14	19	15.59	.761
Valid N	3427				

Youth's Self-Reported Description of Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	White, non-Hispanic	587	17.1	17.1	17.1
	Black, non-Hispanic	1594	46.5	46.5	63.6
	Hispanic/ Latino	808	23.6	23.6	87.2
	Other, non-Hispanic	86	2.5	2.5	89.7
	Multi-racial, non-Hispanic	175	5.1	5.1	94.8
	Not Available	177	5.2	5.2	100.0
	Total	3427	100.0	100.0	

Youth's Gender at Birth

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	1767	51.6	51.6	51.6
	Female	1660	48.4	48.4	100.0
	Total	3427	100.0	100.0	

TABLE 4: Factor Loadings and item R^2

Latent Variable	Estimate	SE	P (>|t|)	R^2
Psychological/emotional abuse at home visit				
Scolded, derogated, or criticized	0.815	0.076	<0.001	0.664
Shouted at youth	0.815	0.076	<0.001	0.664
Psychological/emotional and physical abuse				
Shouted/swore at in past year	0.718	0.059	<0.001	0.516
Shouted, yelled, screamed, swore, cursed at you	0.539	0.057	<0.001	0.290
Hit or slapped past year	0.730	0.076	<0.001	0.532
Hit or slapped you	0.576	0.081	<0.001	0.332
Witness domestic violence				
Physical fight with partner, youth present	0.749	0.243	0.002	0.562
Seriously hurt you, youth present	0.749	0.243	<0.001	0.562
Neglect				
Hungry, could not afford food	0.758	0.087	<0.001	0.574
Evicted past year	0.735	0.126	<0.001	0.541
Utilities turned off past year	0.720	0.080	<0.001	0.518
Stayed at shelter or other past year	0.726	0.132	<0.001	0.527
Did not see MD/hospital past year	0.548	0.112	<0.001	0.300
Telephone disconnected	0.795	0.069	<0.001	0.633
Witness assault with and without weapon				
Frequency saw person attacked w/weapon past year	0.890	0.046	<0.001	0.792
Frequency saw person shot past year	0.827	0.054	<0.001	0.684
Frequency saw person hit, slapped, punched	0.905	0.040	<0.001	0.820
Bullying, emotional bullying and theft				
Kids at school hit/threaten to hurt you physically	0.926	0.080	<0.001	0.857
Kids at school take things without asking	0.568	0.118	<0.001	0.322
Kids at school pick on you/say mean things	0.814	0.069	<0.001	0.663
Kids at school purposely leave you out of activities	0.655	0.079	<0.001	0.429
No Assault no weapon*				
Got into serious physical fight	0.481	0.194	0.013	0.406
Ever been a victim of crime	-0.587	0.112	<0.001	0.344
Officer used physical force during incident	-0.309	0.092	<0.001	0.096
Residing in dangerous community				
Gangs are a problem in this neighborhood	0.689	0.056	<0.001	0.474
Fear of kids outside d/t neighborhood violence	0.738	0.063	<0.001	0.544
Neighborhood doesn't get along	0.572	0.049	<0.001	0.327
Gangs are a problem in this neighborhood	0.773	0.046	<0.001	0.598
Feel unsafe in neighborhood during day	0.520	0.060	<0.001	0.271
Feel unsafe in neighborhood during night	0.434	0.053	<0.001	0.188
Living in dangerous family				

Partner has alcohol/drug problem	0.592	0.125	<0.001	0.352
Used illegal drugs past year	0.597	0.111	<0.001	0.356
Spent time in jail since last interview	0.606	0.128	<0.001	0.367
Sold drugs, prostituted, or hustled past year	0.736	0.163	<0.001	0.544
PCG's partner uses drugs	0.651	0.119	<0.001	0.426
Non-Chaotic & non-multi-problem family environ*				
Below poverty level 1 at 15years	0.553	0.058	<0.001	0.306
Can't hear self think at home	-0.740	0.052	<0.001	0.547
Can't hear yourself think in home	-0.394	0.073	<0.001	0.155
Real zoo in home	-0.363	0.075	<0.001	0.132
Home is a real zoo	-0.640	0.054	<0.001	0.410
Child has emotional problems that increase risk behavior, engender antagonize, and compromise the capacity to protect oneself				
Youth is cruel, bullies, shows meanness	0.731	0.039	<0.001	0.547
Youth destroys things belonging to others	0.773	0.041	<0.001	0.612
Youth gets in many fights	0.775	0.043	<0.001	0.617
Youth physically attacks people	0.789	0.052	<0.001	0.639
Youth has temper tantrums or a hot temper	0.747	0.031	<0.001	0.572
Youth threatens people	0.823	0.040	<0.001	0.697
Youth can't sit still, restless, hyperactive	0.591	0.045	<0.001	0.354
Youth lies or cheats	0.700	0.034	<0.001	0.500
Youth argues a lot	0.685	0.035	<0.001	0.479
Youth runs away from home	0.674	0.072	<0.001	0.463
Youth sets fires	0.619	0.128	<0.001	0.389
Youth steals at home	0.694	0.064	<0.001	0.492
Youth steals outside home	0.766	0.055	<0.001	0.600
Youth is unhappy, sad, or depressed	0.600	0.044	<0.001	0.366
Youth vandalizes	0.740	0.071	<0.001	0.560
Youth has been suspended/expelled	-0.695	0.040	<0.001	0.492
Deliberately damaged other's property	0.556	0.076	<0.001	0.313
Taken something from store without paying	0.482	0.071	<0.001	0.235
Got into serious physical fights	0.206	0.180	0.254	0.234
Hurt someone bad, need bandages/medical care	0.481	0.066	<0.001	0.234
Stole something worth more than $50	0.490	0.108	<0.001	0.242
Went to house or building to steal	0.632	0.115	<0.001	0.406
Used/threatened use weapon to get something	0.707	0.119	<0.001	0.510
Sold marijuana/other drugs	0.531	0.097	<0.001	0.285
Took part in group fight	0.480	0.061	<0.001	0.232

p < .05
* Direction of factor was reversed

TABLE 5: Factor Correlations for Hypothesized Polyvictimization Measurement Model

	pvpev	pvpepa	pvwd	pvng	pvww	pvb	pvan	pp1dc	pp2df	pp3cf	pp4ep
pvpev	1										
pvpepa	-0.270*	1									
pvwd	0.331	-0.335	1								
pvng	0.239	-0.272*	0.270	1							
pvww	-0.078	0.194*	-0.222	-0.414*	1						
pvb	-0.264	0.263*	-0.252	-0.065	0.071	1					
pvan	-0.267	0.400*	-0.265	-0.285*	0.390*	0.417*	1				
pp1dc	0.169	-0.227*	0.107	0.306*	-0.706*	-0.242*	-0.414*	1			
pp2df	0.333	-0.479*	0.548*	0.587*	-0.393*	-0.198	-0.544*	0.314*	1		
pp3cf	0.179	-0.320*	0.350	0.476*	-0.382*	-0.146	-0.303*	0.410*	0.425*	1	
pp4ep	-0.526*	0.525*	-0.423*	-0.287*	0.301*	0.296*	0.652*	-0.273*	-0.452*	-0.444*	1

* p < .05

TABLE 6: Regression Table

Latent Variable (R₂) (Factor)	Esti-mate	SE	P (>|t|)	Stand-ardized
Psychological/emotional abuse at home visit ($R^2=$ 0.309)				
Residing in dangerous community	0.041	0.184	0.826	0.034
Living in a dangerous family	0.170	0.313	0.588	0.141
Non-Chaotic, non-multi-prob. family environ	-0.160	0.235	0.498	-0.133
Child…increase risk ...capacity to protect self	-0.628*	0.251	0.013	-0.522
Psych/emotional and physical abuse ($R^2=$ 0.350)				
Residing in dangerous community	-0.029	0.102	0.777	-0.023
Living in a dangerous family	-0.360	0.207	0.082	-0.290
Non-Chaotic, non-multi-prob. family environ	-0.013	0.127	0.920	-0.010
Child…increase risk ...capacity to protect self	0.478*	0.123	<0.001	0.385
Witness domestic violence ($R^2=$ 0.371)				
Residing in dangerous community	-0.188	0.247	0.447	-0.149
Living in a dangerous family	0.576	0.465	0.215	0.457
Non-Chaotic, non-multi-prob. family environ	0.158	0.323	0.624	0.125
Child…increase risk ...capacity to protect self	-0.260	0.284	0.360	-0.206
Neglect ($R^2=$ 0.418)				
Residing in dangerous community	0.077	0.135	0.568	0.059
Living in a dangerous family	0.641*	0.289	0.027	0.489
Non-Chaotic, non-multi-prob. family environ	0.365*	0.166	0.028	0.278
Child…increase risk ...capacity to protect self	0.098	0.157	0.531	0.075
Witness assault with and without weapon ($R^2=$ 0.535)				
Residing in dangerous community	-0.923*	0.170	<0.001	-0.630
Living in a dangerous family	-0.239	0.256	0.351	-0.163
Non-Chaotic, non-multi-prob. family environ	-0.054	0.151	0.723	-0.037
Child…increase risk ...capacity to protect self	0.057	0.152	0.708	0.039
Bullying, emotional bullying and theft ($R^2=$ 0.119)				
Residing in dangerous community	-0.193*	0.097	0.046	-0.182

Living in a dangerous family	-0.055	0.193	0.777	-0.051
Non-Chaotic, non-multi-prob. family environ	0.071	0.124	0.567	0.067
Child…increase risk ...capacity to protect self	0.269*	0.117	0.022	0.253
No Assault no weapon (R^2= 0.561)				
Residing in dangerous community	-0.364	0.211	0.084	-0.242
Living in a dangerous family	-0.447	0.397	0.261	-0.296
Non-Chaotic, non-multi-prob. family environ	0.250	0.249	0.315	0.165
Child…increase risk ...capacity to protect self	0.802*	0.380	0.035	0.531

* $p < .05$