Trajectories of Intimate Partner Violence and Help-Seeking Among Older Adult Women

in the Southwest United States: A Life Course Perspective

by

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ABSTRACT

Intimate Partner Violence (IPV) is a common experience among (lifetime prevalence 16.5% - 54.5%); however, current research, intervention programs, and policies tend to target women of child-bearing age, leaving older adult women feeling unseen and unheard. The purpose of this study was to provide a more accurate picture of violence against women over the life course. Guided by Life Course Theory, the characteristics of trajectories of IPV events and IPV-related help-seeking were assessed among a sample of community-dwelling women aged 60 or older residing in the Southwest United States (n = 52). Semi-structured retrospective interviews were conducted using a Life History Calendar (LHC). The characteristics of trajectories of IPV by type (physical, psychological, sexual) and by frequency (high, low) were examined. The impact of experiencing Adverse Childhood Experiences (ACES) on trajectories of violence were analyzed to account for childhood victimization in the life course. To better understand IPV-related help-seeking behaviors, the characteristics of trajectories of IPV-related help-seeking by age, type of IPV, and frequency of IPV were examined. Generalized linear mixed modeling was used to evaluate whether the probability of experiencing IPV and seeking IPV-related help changed over the life course.

Half of the women in the sample experienced IPV at age 45 or later (n = 28; 53.8%), with approximately one-quarter of the women in an intimate relationship reporting IPV at time of interview (n = 6; 27.3%). Findings revealed curvilinear characteristics of IPV experience by type and frequency over the life course, with the probability of IPV events increasing earlier in life then decreasing later in life. Compared to previous studies that report IPV events decreasing in the latter 20s, the probability of

experiencing IPV events increased later into adulthood (mid to late thirties among women in the study sample). The probability of seeking IPV-related help increased earlier in the life course and then declined, with the occurrence of IPV of all types significantly affecting trajectories of help-seeking behavior. Findings from this study contribute evidence needed for the recommendation of IPV screening into older adulthood and the adaptation of supportive services for older women seeking IPV-related help.

Dedicated to the inspiring women who graciously shared their stories for this project.

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CHAPTER 1

INTRODUCTION

Background

The Impact of Intimate Partner Violence

Gender-based Violence (GBV) is globally recognized as a violation of human

rights with critical consequences to health and wellbeing among women of all ages

(World Health Organization [WHO], 2021). *Intimate Partner Violence* (IPV), a form of

GBV, is defined as physical, sexual, and emotional abuse and controlling behaviors by a

current or former intimate partner (e.g. spouse, fiancé, dating partner) with varying

degrees of severity (WHO, 2021). In their lifetime, approximately one in four adult

women (23%) in the United States report having experienced severe physical violence

from an intimate partner (National Intimate Partner and Sexual Violence Survey

[NISVS]; Smith et al., 2017), and nearly half of all women (47%) have experienced

psychological aggression by an intimate partner (NISVS; Smith et al., 2017). Though

IPV is believed to be a common experience among women of all ages (lifetime

prevalence 16.5% - 54.5%; Rennison & Rand, 2003; Roberto & McCann, 2018; Zink et

al., 2006), the majority of existing studies examine violence against women of

reproductive age (15 – 49 years) with little investigation of patterns and types of violence

experienced by women over the age of 50 (Miller et al., 2018).

Compared to older adulthood, the impact of IPV on younger women is well-

studied. In the United States, women who have experienced IPV in late adolescence and

early adulthood have fewer social supports, poorer health, and higher rates of depression

compared to women that have not experienced IPV in their relationships in younger years

(Felitti et al., 1998). Younger women experiencing IPV are also less likely to complete high school, which limits opportunities across the life course that may contribute to intergenerational poverty cycles (Noll et al., 2009; Ports et al., 2016). Though understudied for older women, IPV for women of all ages is considered a major physical and mental health concern in the United States. Economic insecurity, health concerns, and considerations of children impact access to resources regardless of age; however, older women may be more likely to suffer from poor physical health and increased social isolation that create additional barriers to seeking help for IPV (Zink et al., 2003).

The incidence of IPV on older adulthood is likely underreported. Most studies assessing IPV among older adult women ask about experiences of victimization within the last 12 months and use definitions of violence that older adult women may not identify as acts of violence. The little research that examines violence in older adulthood often exposes a history of recurrent abuse that negatively impacts health and wellbeing throughout their lifetime (Roberto & McCann, 2018). Women experiencing continuous violence from their intimate partners over the life course have reported profound adverse mental and physical health consequences including chronic physical conditions (e.g. heart or joint problems) and/or depressive symptoms (Bonomi et al., 2007; Fisher & Regan, 2006). Additionally, IPV among older adult women may be understudied due to the assumption that experiences of IPV are captured under the umbrella of *Elder Mistreatment* (EM).

Elder Mistreatment

Typically, aging researchers and practitioners employ the concept of EM when investigating experiences of victimization among older adults. The National Research

Council (NRC; 2003) defines EM as "(a) intentional actions that cause harm or create a serious risk of harm (whether or not harm is intended) to a vulnerable elder by a caregiver or other person who stands in a trust relationship to the elder or (b) failure by a caregiver to satisfy the elder's basic needs or to protect the elder from harm" (p. 1). According to the NRC, EM excludes cases of self-neglect as well as victimization of older adults by strangers. Two factors stand out in this definition: the requirement of the older adult to be considered vulnerable and the emphasis on the caregiver relationship. Though the definition does not exclude intimate partners as potential perpetrators, caregivers are a distinct focus.

Generally the term EM conjures up an image of a dependent older adult neglected or victimized by a caregiver, usually an adult child rather than an intimate partner (Pillemer & Burnes, 2015). This assumption is not without merit; however, the victimization of older adults is far more complex than this image suggests. The simplification of older adult victimization to this assumption may be due to the absence of a universal definition of EM, resulting in a lack of consensus of risk factors, prevalence rates, and effectiveness of interventions that target older adult victimization inclusive of intimate partners. Policies created to address EM follow suit. For instance, interventions employed for older adults by Adult Protective Services (APS) workers have been limited by strict definitions of how vulnerability is defined in older adulthood and a lack of understanding of how IPV may impact women in older adulthood (Title X, 1974, §§ 35-20-102).

History of Adult Protective Systems

APS was developed in the United States in the 1970s as part of the Public Welfare Amendments to the Social Security Act to identify and protect vulnerable adults (Title XX, 1974). Vulnerable adults are defined as those who "have physical or mental limitations, are unable to act in their own behalf; are seriously limited in the management of their affairs; are neglected or exploited; or are living in unsafe or hazardous conditions" (1974, §§ 35-20-102). States then developed their own legislation as a result of this federal mandate focusing on vulnerable or dependent adults, not exclusively limited to older adults. In Arizona, for example, older adult victims of abuse are referred to Arizona APS. Arizona APS investigates reports of abuse, neglect and exploitation that occur to vulnerable adults aged 18 and over. Arizona APS defines abuse as "intentional infliction of physical harm, injury caused by negligent acts of omission, unreasonable confinement, [and] sexual abuse or sexual assault" (ARS, 2013, §§ 13 – 3623). The organization separates the definition of neglect and exploitation from its definitions of abuse. They define neglect as "deprivation of food, water, medicine, medical services, shelter, cooling, heating or other services necessary to maintain minimum physical or mental health" without the informed consent of the adult (ARS, 2013, §§ 13 – 3623). Exploitation is defined as a perpetrator using the adult's resources for his or her own advantage.

Although the APS mandate was created in the 1970s, EM was largely ignored by the U.S. government as a priority issue until 1992 when the creation of the National Center on Elder Abuse (NCEA) was added to the Older Americans Act (OAA, 1992, §§ 3001 – 3058ff). The NRC (2003) states that EM became a national concern when the

focus shifted from vulnerable adults aged 18 years of age or older to a focus specifically on *aging* adults aged 60 and over, in part due to the creation of this center. At this time, EM was considered a symptom of overburdened caregivers. Therefore, funding for research largely focused in the area of caregiving, which was intended to prevent EM from occurring. The creation of the NCEA resulted in EM research receiving more attention in the last few decades than ever before (NRC, 2003). However, despite the NCEA providing its own definition of abuse, disagreement still remains among researchers and policy makers regarding the definition of EM, including what is considered abuse and who is at risk. Despite this, the following categories are consistently cited as acts of abuse of vulnerable adults aged 60 and over: physical abuse, psychological abuse, sexual abuse, financial exploitation, and neglect.

It should be noted that even if APS discovered evidence of abuse, exploitation, or neglect, the report would be unfounded in many states if the adult was not deemed *vulnerable*. For instance, Arizona APS defines a vulnerable adult as someone "who is unable to protect him/herself from abuse, neglect or exploitation by others because of a physical or mental impairment" (ARS, 2013, §§ 13 – 3623). Capacity is evaluated by a physician who documents whether the adult can make their own decisions; however, a court action is necessary to declare that an adult is incapacitated. At any time, however, if a physician states the adult can make their own decisions, the adult is not deemed vulnerable and the report will be unfounded.

Though APS will intervene in cases of abuse and neglect with vulnerable adults, older adults with decision-making capacity will need to seek assistance elsewhere if they are experiencing victimization. In Arizona, an exception is made if the abuse falls under

the umbrella of financial exploitation. In August 2019, SB 1483 went into effect, which provides protection against financial exploitation against any adult aged 65 and older regardless of whether the older adult meets the strict vulnerability criteria (Arizona Corporation Commission, 2019). Similarly, in California EM is not limited to cognitive vulnerability; rather, mistreatment includes any individual over the age of 65 (American Bar Association Commission on Law and Aging, 2020). This change in California policy may provide resources for women experiencing IPV that would have otherwise been ignored. In most states, however, older adult women experiencing IPV are often overlooked by services that provide EM intervention.

A Call to Broaden EM Research

More recently, researchers have been called to broaden EM research to include IPV in later life under the umbrella of EM rather than having separate research silos (Brandl & Raymond, 2012; Pillemer et al., 2015). This has been problematic, as gerontologists familiar with the tools and resources created to focus on EM with caregivers are largely unfamiliar with the tools utilized by IPV researchers. Prevalence estimates of IPV from nationally representative studies of violence among older adults have been considered inaccurate due to this lack of familiarity with IPV research design. Examples include studies utilizing definitions of violence that did not include behavioral indicators, interviewing the participant with the spouse or partner present, and asking whether the participant experienced violence within a time frame limited to the previous 12 months (Roberto & McCann, 2018; Zink et al., 2006). Incorporating measures that include a full range of behaviorally specific indicators of IPV most often used in IPV research may capture experiences of abuse more often experienced by women, leading to

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a more accurate prevalence rate (Rosay & Mulford, 2017). One study found that measures incorporating violent behavior indicators similar to those used in IPV research resulted in a reported psychological violence prevalence rate among participants aged 70 or older that was six to ten times greater than rates reported in previous studies (Rosay & Mulford, 2017). In other words, higher-than-expected rates of psychological abuse among older adult women were found when using tools considered appropriate for assessing IPV compared to EM assessment tools.

IPV and EM researchers have been called to jointly include language recognizing the occurrence of abuse across the lifespan (Crockett et al., 2015). Inclusion of IPV in EM definitions may encourage the prevention and treatment of IPV among older adult women in research, policy, and practice. Currently, the United States Preventive Task Force recommends screening women for IPV between the ages of 15 and 46 (Curry et al., 2018). Though recently updated, this report states there is insufficient evidence to determine whether women older than 46 years of age should be screened for IPV. Given the ever-increasing older adult population, over 40% of women will not receive the screening if practitioners deem it unnecessary based on insufficient evidence (Crockett et al., 2015). The exclusion of older adults in IPV screenings sends a message that violence against older adult women does not necessitate attention from researchers, policymakers, or clinicians.

Statement of the Problem

Though researchers, practitioners, and policymakers have identified strategies and developed programming intended to address violence at an early age (Nilon et al., 2017), few strategies have been identified for successful interventions among older populations

(Pillemer et al., 2015). In fact, a technical package of programs, policies, and practices developed by the CDC to address IPV across the lifespan merely provides an acknowledgment that abuse can happen at an older age; no programs, policies, or strategies are discussed within the publication that address IPV among older adult women (Nilon et al., 2017). This omission is due to the limited amount of current research investigating IPV among older adult women and how these experiences of violence may be interconnected over the life course (Pillemer et al., 2015).

Most studies assessing IPV among older adult women ask about experiences of victimization within the last 12 months and use definitions of violence that older adult women may not identify as acts of violence. Hospital records and police records are known to be incomplete and inaccurate in capturing the prevalence of IPV among women of any age. Thus, researchers have been unable to capture an accurate snapshot of victimization over the life course. Because little research has been completed with this population, funding for programs that assist older adult women experiencing IPV is meager. To address this oversight and give voice to this population, the proposed study seeks to capture violence across the life course to provide a more accurate picture of violence against women of all ages.

Current Study

Using life history calendar methods, this study examines trajectories of IPV across the life course among older adult women in the Southwestern United States. Addressing limitations of previous research, this study incorporates measures of various types of abuse experienced over the life course rather than examining EM as one larger phenomenon, which older adult researchers suggest will help to bridge the silos between

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EM and IPV research (Pillemer & Burnes, 2015). In addition to capturing trajectories of IPV, this study captures trajectories of IPV-related help-seeking over the life course. Given the increasing aging population in years to come, this research is needed for the safety, health, and well-being of older adult women that may otherwise feel unseen and unheard. Research showing the trajectory of abuse and the prevalence of abuse over time may help to support a policy that requires screening through later life, such as supporting a recommendation that the United States Preventive Task Force screen for IPV after the age of 45. Capturing trajectories of help-seeking behavior may inform IPV and older adult outreach workers of specific formal and/or informal support systems in which older women are in contact. Additionally, capturing help-seeking behavior over the life course may identify valuable resources for intake and/or referral at different age periods.

This social constructionist, quantitative study is guided by the following Life Course theory-driven research questions:

Q_1: What are the characteristics of trajectories of IPV across the life course among older adult community-dwelling women in the Southwestern United States?

Q_2: What are the characteristics of trajectories of IPV by frequency across the life course among older adult community-dwelling women in the Southwestern United States?

Q_3: Can trajectories of IPV across the life course be predicted by ACE scores?

Q_4: Can trajectories of IPV-related help-seeking behavior across the life course be predicted by age or type of IPV?

CHAPTER 2

LITERATURE REVIEW

IPV Among Older Adult Women

Definition and Prevalence

To understand the experiences of victimization of women across the life course, IPV research inclusive of older adult women is needed. Definitions of violence vary across research silos and across victims' age groups and cultures (Crockett et. al, 2015; Walsh et al., 2010). How a child-bearing aged woman defines IPV may not be consistent with the way in which a woman defines violence at age 60. An 80-year-old woman may not define violence in the same way as a 60-year-old woman. A refugee that recently moved to the United States may not recognize or define violence in the same way a woman whose lived her entire life in the United States defines violence. The lack of universal definitions for IPV among older adult women may produce inaccurate prevalence rates leading to the perception that older women simply do not experience IPV at the rate or severity of younger women.

The few prevalence studies of IPV among older adult women indicate that, overall, IPV declines in later life with physical violence appearing to decline at a sharper rate than other types of violence (Rennison & Rand, 2003). Notably, non-physical IPV (e.g. controlling and emotional abuse) may increase in severity as women and their abusive partners age (e.g., Daly et al., 2008; Fisher & Regan, 2006). One study found that expanding IPV examples in data collection tools to include various types of psychological abuse produces similar IPV prevalence rates to younger cohorts (Zink et al., 2006). Coercive control (i.e., fear and intimidation to control and dominate) is noted

as a common type of violence reported among older women (Roberto & McCann, 2018), with many researchers suggesting that focusing on controlling behavior might be key to understanding IPV in later life (Montminy, 2005). Researchers posit that it is possible controlling behavior may have been excused as typical in intimate relationships by women in the beginning of the relationship, but over the life course these controlling behaviors may escalate. Older women may not view coercion as abusive, especially if they have previous experiences of physical violence during their younger years (Roberto & McCann, 2018). The resulting fear and intimidation felt by the older women coupled with distinct barriers due to age can lead to isolation, loneliness, and adverse health effects (Eisikovits & Band-Winterstein, 2015; Winterstein & Eisikovitz, 2005)

How older adult women define abuse varies across various cultural groups (Walsh et al., 2010). Older adults from different racial and ethnic backgrounds define, experience, and seek help in different ways (Enguidanos et al., 2014). In addition to age and disability, race, ethnicity, sexual orientation, and immigration status all contribute to how women perceive and define violence, which in turn impacts researchers' and clinicians' ability to identify abuse through screening tools (Crockett et. al, 2015). Older women from immigrant communities with limited or no English language are at risk for extreme levels of household labor through intimidation by partners and adult children (Moon & Evans-Campbell, 2000). A number of researchers have called for additional studies that contribute to the understanding of violence and the prevalence of violence among older adult women in underrepresented communities and the need for targeted interventions for these populations (e.g., Crockett et. al, 2015; Enguidanos et. al, 2015; Moon & Evans-Campbell, 2000; Walsh et al., 2010).

Experiences of violence vary considerably across age cohorts and cultural groups. As an example, abuse by the mother-in-law is very common in India, which may eventually turn into retaliatory abuse by the daughter-in law during old age (WHO, 2002). There may be additional barriers to IPV-related help-seeking for older adult women from underrepresented populations, including cultural norms and beliefs about what constitutes violence. Many older adult immigrant women do not believe they qualify for assistance in the United States and economic hardship may also lead to a dependence on abuse adult children. Economic hardship is a considerable barrier for women seeking safety. A secondary analysis of the Elder Abuse Study found that older adults remain in abusive relationships if they believe they cannot obtain safe and affordable housing, as it is a choice between living in abuse or in poverty (Walsh et al., 2010). Additionally, older adult women from underrepresented populations may struggle with the impact of social isolation from the dominant culture as well as the barrier of communicating in the dominant language, if this applies.

A qualitative study of the experience of violence among older Black/African American women found that utilizing the term *family violence* was more effective at capturing experiences of victimization compared to solely using IPV or EM terminology (Paranjape et al., 2009). The term captured violent events such as experiences of racism by the perpetrator and feeling controlled by their partner for access to money. The women in this sample stated their low income and scarce resources resulted in the belief that borrowing money was a form of financial exploitation. Respondents in the focus group indicated that experiences of racism from perpetrators were also associated with an increase in family violence for older Black/African American women. Neighborhood

violence was also suggested as a potential experience of victimization that may not be captured in traditional tools. In an analysis of the experience of victimization in public housing, Black female residents were found to be at much higher risk of aggravated assault compared to Black and White women living in other types of housing (Holzman et al., 2001).

Risk Factors

Rosay and Mulford (2017) found that 43.8% of older adults in their study were victimized by at least one intimate partner. Several risk factors were identified. Limited activities of daily living and health care insecurity significantly increased risk of victimization. Health care insecurity increased the odds of experiencing psychological and physical abuse. This study suggests that variables measuring financial strain such as health care insecurity are useful in predicting psychological and physical abuse among intimate partners. The combination of financial barriers and health care needs may contribute appreciably to victimization vulnerability. As financial exploitation is one of the most common forms of victimization among older adults, it is imperative that researchers examine the nuances of financial strain and physical well-being as it relates to increased risk for abuse.

Risk factors reported by Caetano and colleagues (2008) in the second-wave of a longitudinal study on IPV victim and perpetrator characteristics found the following to be risk factors for IPV in older age: alcohol consumption, alcohol problems, depression, feelings of powerlessness, impulsivity, ethnicity, age, marital status, length of relationship, education, and employment. Higher rates of abuse were found within the American Indian, Black/African American, and Latinx communities. Women who were

divorced or separated, had an income of $20,000 or less and worked in service or labor jobs were more likely to report all types of victimization. Women who were not married but were living with their partners were five times more likely to experience victimization. Compared to older women that had not experienced abuse, women that have experienced abuse had poorer physical and mental health and social function.

Poor social networks have been noted as a risk factor for abuse in multiple studies (Dong et al., 2011; Lachs et al., 1997). Women report emotional abuse from their partners intensifying once adult children leave the home (Band-Winterstein & Eisikovits, 2009). Older adults living alone may be a protective factor from EM (Lachs et al., 1997). Although this finding seems to conflict with the finding that social isolation leads to mistreatment, the authors posited that the dwindling social network that results in social isolation may come to include only the abuser, making it difficult for the victim to seek assistance.

Living in poverty and functional impairment have also been noted as risk factors for abuse (Caetano et al., 2008; Del et al., 2005; Lachs et al., 1997). Women reporting higher levels of disability have a greater number of reported instances of victimization, and these women may face additional barriers to feasibly exiting a relationship (Caetano et al., 2008). The rate of disability is 40% for adults over the age of 65 and 53% for adults over the age of 75, increasing the risk for victimization among older adults (Walsh et al., 2010). Older women reporting sexual assault were also found to have higher rates of cognitive disabilities and poorer mental health (Del et al., 2005).

Women aged 55 or older are more likely than men to be victims of stalking and physical assault, with employed women having a higher likelihood of physical assault

(Jasinski & Dietz, 2004). Compared to women over the age of 60, women in their fifties are more likely to report victimization in any form, though this may be due to differences in definitions of violence and social norms regarding violence in relationships in specific age cohorts (Baker et al., 2009). Compared to younger older adults, older age is associated with a lower likelihood of being victimized. That is, women in their seventies are less likely to report IPV compared to women in their fifties and sixties. Though this may be due to differences in definitions of violence and social norms, it also may indicate that older adult women have exited these relationships (Caetano et al., 2008). Further investigation utilizing a life course approach to understanding violence may help to explain this phenomenon. Although there have been a number of studies examining characteristics of IPV among younger women, there is generally a lack of research examining changing characteristics of violence and risk factors of violence from younger adulthood all the way through older adulthood.

Age Cohorts

To examine age-specific contexts to better understand how older adults experience abuse, defining when *older age* begins is necessary. Given that IPV research generally focuses on women through child-bearing age, should older adult IPV begin where IPV research ends? Most researchers use a cut-off of 60 years of age or older in aging research (Cook et al., 2011). However, given that the cutoff for recommended IPV screening is much younger than 60 years of age, lowering the age in which older adult IPV researchers examine instances of violence may help fill a gap in research and clinical practice. It has been suggested that older adult IPV research assessing victimization across the lifespan include women aged 46 and older (Crockett et al., 2015). These

researchers point to the baby boomer age cohorts as further justification for age 46 as a starting point for IPV research. Baby boomer women coming of age between the years of 1964 and 1982 have a youngest cohort of older women in their late 40s. This cohort of women (and older cohorts) entered into adulthood when marital rape was still legalized (Hasday, 2000). Prior to 1984 and the enactment of the Family Violence Prevention and Services Act (FVPSA), no national legislation existed to support domestic violence survivors. The Violence Against Women Act (VAWA) would not be passed for another ten years after FVPSA. The women in these older cohorts came of age in a time when IPV survivors did not have legal recognition or resources (Crockett et al., 2015). According to this logic, IPV research with older adult women should include women no longer of childbearing age.

Another argument in favor of including younger cohorts of older women in IPV aging research is that women in their later 50s are too young to qualify for Social Security or Medicare and may make significantly less income than their partners due to early adulthood familial obligations (Sigle-Rushton & Waldfogel, 2007; Zink et al., 2003). The gender pay gap is largest for women aged 57 and 58 in the United States, with women making 74.2% of the median male income (Kiersz, 2019). For women of this age group that do not work or have difficulty finding employment, exiting an abusive relationship may result in the loss of health insurance coverage, which is vital for the older adult population as chronic illness becomes more prevalent. Ageism in hiring practices and differences in ability to do physical labor are additional barriers to older adult women (Anderson et al., 2013). Lack of employment opportunities combined with a decreased physical ability to work in certain employment sectors may prevent women

from financial independence and therefore increases economic dependency on those in relationships (Band-Winterstein, 2015).

Barriers to women exiting relationships include the increased dependency on support systems due to natural aging processes and systemic ageist consequences. Health-related issues due to chronic illness may increase the woman's physical dependency on her partner. Women with lifelong physical disabilities and women that have recently become disabled may also fear being placed in a residential facility and decide to remain in an abusive relationship rather than face being placed in a facility (Band-Winterstein, 2015). The partner perpetrating violence is likely aging, too, and may have increased dependence on the individual. Social expectations of providing caregiving for a spouse may be one reason older women continue to care for the aging partner despite abuse.

Loneliness and social isolation have been identified as risk factors for abuse in the older adult population, as well as a strong desire for companionship due to these factors (Beaulaurier et al., 2007; Brandl et al., 2003; McGarry & Simpson, 2011). Older adult women in a caregiving role may be hesitant to exit a psychological or verbally abusive relationship out of a feeling of duty and declining health of the dependent spouse (Beaulaurier et al., 2007; Zink et al., 2003). Older women have also reported that their adult children have not believed their reports of abuse and have even encouraged the women to remain in the relationship (Leisey et al., 2009). Women in declining health may depend on the care of their spouse. These generational factors combined with ageism contribute to the isolation, hopelessness, and invisibility of older adult women experiencing violence (Brandl et al., 2003; Dunlop et al., 2005; Leisey et al., 2009).

Aging and IPV Help Seeking

The self-help model of IPV programming generally assumes that a survivor is able to transport herself to a shelter and identify the need for support (Tetterton & Farnsworth, 2011). Older women and women with disabilities with mobility issues or other health concerns that require special care may find it impossible to access these services. Transportation is frequently cited as a major barrier to resources for older adults (Straka & Montminy, 2006). The increased social isolation of older adult women combined with the perception that IPV resources are exclusively for younger women are additional barriers to older women seeking services (Brandl et al., 2003; Dunlop et al., 2005; Leisey et al., 2009; Straka & Montminy, 2006). Indeed, outreach materials typically present images of young women and may use specific IPV terminology that older adult women may not identify with their own experience, indicating that outreach materials may require some modification to include older adult women (Crockett et al., 2015). For instance, older adult women may be more likely to indicate they have experienced IPV given behavioral indicators of violence (e.g. responding yes to "have been slapped, kicked, or shoved") rather than stating they have been physically abused (Yoshihama & Bybee, 2011).

Emergency shelters also lack training for addressing the specific needs of older adult women and many social programs, such as WIC or TANF or registering for the Earned Income Tax Credit, do not apply to older adult women. Programs that offer peer counseling may lack peers of a similar age such as support groups, which may feed into the feeling of isolation and not-belonging (Brandl et al, 2003; Leisey et al., 2009). Peer-based advocacy for older adult women survivors have positive impacts on older adult

women's feelings of empowerment and resilience, suggesting the necessity of peer-based support for this population (Brandl et al., 2003; Tetterton & Farnsworth, 2011).

Many older adults may not report abuse due to fear of institutionalization (Cyphers, 1999). In the United States, ageism impacts the social systems negatively through inadequate income assistance for older adults, lack of safe affordable housing, and the cyclical nature of poverty (WHO/INPEA, 2002), which leads to the responsibility of caring for older adults to family members, including violent intimate partners. Burnes and colleagues (2017) found that victims of EM perceived abuse as less seriousness if the perpetrator is a close family member, perhaps due to kinship and familial loyalty. Additionally, if the victim does not have physical wounds from EM then they may perceive the abuse to be less serious. Victims may be more forgiving of abuse as an act of self-blame. That is, the victim feels that the abuse is justified due to being dependent upon the perpetrator for care or causing financial strain due to not being able to work. Older adults are less likely to report abuse if they need care from the perpetrator or are unable to physically resist violence (Walsh et al., 2010).

Highlighting the margin many of these women fall into between IPV and EM, EM and aging networks lack training in IPV awareness, screening, and interventions (Pillemer et al., 2015; Straka & Montminy, 2006). Professionals working with older adults may neglect gender-based dynamics of power and instead solely focus on vulnerabilities attributed to aging (Crockett et al., 2015). Rather than referring an older adult victim to an IPV resource, many clinicians report allegations of abuse to APS, which requires the adult to be completely dependent on the caregiver to be founded (with the exception of financial exploitation). Unfortunately, it is not typical for APS to refer to

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IPV programs in these instances (McGarry & Simpson, 2011; Straka & Montminy, 2006; UN DESA, 2013).

Lack of training for signs of IPV among older adults may lead social workers and healthcare professionals to assume medical symptoms, such as confusion or bruising, are due to older age rather than signs of IPV (Anetzberger 2001; Lachs and Pillemer 2004; Wyandt 2004). Indeed, signs of IPV in older age mimic the natural aging process (Payne & Policastro, 2011). Social workers are less likely to consider behavioral indicators of IPV as abuse among older adult women, indicating ageism leads to ineffective intervention even when older adult women seek assistance (Yechezkel & Ayalon, 2013). Social workers who are unable to define abuse among the older adult population will therefore miss providing interventions for the abuse. Therefore, the effectiveness of help-seeking may differ for older adult women experiencing ageism from social workers and healthcare professionals compared to the younger population.

Theoretical Framework: Life Course Theory

The life course framework can inform research on the trajectory of violence among older adults. Researchers have suggested the life course framework as a good fit for older adult studies; however, it is underutilized (Podnieks, 1993; Selwood et al., 2009). This framework proposes that aging and development are lifelong, with early developmental experiences influencing individuals even in their later years (Elder, 2006). Life course theory asserts that individuals develop within separate dimensions simultaneously: biological, psychological, and social. Rather than acting as silos, these dimensions are dynamic and influence each other greatly over the life course. The life course framework has five core principles: (1) the timing of events; (2) the interplay of

human lives and historical times; (3) linked or interdependent lives; (4) human agency in choice making; and (5) life-span development (Elder Jr. & George, 2017).

Life course theory principles are helpful in understanding IPV over the life course among older adult women (Elder, 2006; Elder Jr. & George, 2017; Settersten, 2003). Timing of events examines age, cohort, and period effects, such as life events that are correlated with IPV (e.g. pregnancy). The interplay of human lives and historical times, also referred to as time and place, considers the impact of historical changes on individual lives, such as changes in IPV-related policies and changing attitudes about violence against women over time. The impact of relationships in an individual's social network throughout the life course are reflected through linked lives. Intergenerational poverty and family violence are impactful across generations according to this life course principle. Human agency in choice making accounts for individual free will while also considering how broader social contexts can constrain choices. Gender, race, and age all affect choice-making by affecting opportunities of choices. This principle supports a social constructionist view of how individuals have agency to shape their life course. Finally, life-span development accounts for the continued biological, social, and psychological change that occurs throughout adulthood and older adulthood. Life-span development considers that an individual's life stage may impact the consequences of events that occur within a specific time period, such as the loss of employment in older age.

Life course theory is not only multidimensional, it is also multidirectional. Gains (growth) and losses (declines) occur simultaneously over the life course as individual development transforms between biological, psychological, and social dimensions (Elder

Jr. & George, 2017). These gains and losses may be harmful or favorable to the individual. They may be reversible or irreversible. How harmful or favorable the gain or loss is may depend upon the timing of these events in an individual's life span (Uttal & Perlmutter, 1989). While many human development theories suggest that development ends in adulthood, this theory acknowledges that an individual's development is lifelong, spanning from birth to death (Baltes et al., 1998). Life course theory asserts that individuals continue to have psychological, social, and biological gains even along with decline and loss.

According to this framework, life periods should not be examined separately from one another (Settersten, 2003). In fact, a central tenant of life course theory is "all life periods are understood to involve unique and developmental experiences and no single age period is taken as more important than any other" (Settersten, 2003, p. 18). An individual's experience in adolescence shapes their experience of adulthood. Though each developmental stage is distinctive, they occur within the context of the individual's past, present, and future. Though these periods are intertwined, the theory is not intended to be deterministic. The experiences of childhood are not considered to be so confining that an individual is incapable of utilizing their strengths and resiliency to overcome losses and negative consequences. However, this theory does acknowledge that these childhood experiences can create risk factors for losses and decline in adulthood. This long-view of development intends to encourage researchers to look beyond an individual's current stage of development (Elder, 2006). Rather, researchers are encouraged to integrate theory and research incorporating multiple life stages rather than

examining them separately. Time and change must be examined to conduct life course research.

Continuity and *discontinuity* are central to life course theory (Settersten, 2003). Continuity refers to developmental processes that are continuous through an individual's life, including into older adulthood. Discontinuity refers to processes that are limited to specific periods of time. Changes in levels of functioning or forms of functioning are also examples of discontinuity. Researchers should aim to identify continuities and discontinuities in individuals' lives to examine short-term and long-term effects of significant events. Additionally, collecting this information can help identify processes and mechanisms that create continuities and discontinuities over the life course.

These developmental processes are influenced by the social trajectories of individuals (Elder Jr., 1994). Trajectories are marked by transitions, turning points, and life events over the life course (Elder Jr., 1994). The life course is a set of trajectories that encompass different domains that influence each other. For instance, educational and work trajectories are commonly impacted by each other. Employment that requires a college degree, for instance, can only be achieved by graduating college, a significant event in a person's educational trajectory. Having a baby within the family trajectory may impact an individual's work trajectory, whether or not the individual has full-time childcare. These, often brief, events and transitions are commonly abrupt changes in an individual's life. Frequently, these events coincide with gaining or losing roles (Settersten, 2003). Early life events may create a domino effect on later life events, such that a single event or turning point cannot be understood without having knowledge of previous events and turning points in an individual's life course. The timing, spacing,

density, and duration of earlier events affect later events in an individual's life, such as experiences of victimization in childhood and early adulthood (Elder Jr., 1994).

When conducting aging research, often cohort differences are used to examine life course experiences. Cohorts, groups of people born at the same historical time point, are usually considered to account for the effects of historical events and social norms within an individual's life (Settersten, 2003). Traditionally, cohort studies, considered *inter-cohort* by life course researchers, observe historical and social changes over time (Elder Jr. & George, 2017). Age cohorts are important to investigate due to the relationship between social and individuals, which is dynamic in nature (Elder Jr., 1994). A changing social world results in differences between age cohorts, as social norms shape and influence individuals and individuals shape and influence social norms. However, cohorts do not necessarily age alike, as social, cultural, and environmental transformations impact individuals within each cohort distinctively. Caspi (1998) suggests while cohort differences are important for understanding how society influences individuals at different historical time periods, cohort-based research is often used to infer causation about aging processes and patterns. Caspi (1998) warns against using cohort research in this way; the process of events on social change and the consequent development of individuals within the cohorts should be the primary focus of aging research.

In life course research, the trajectory of events and their impact on the development of the individual should be of interest to researchers rather than simply a description of differences between age cohorts themselves (Elder Jr., 1994). Differences in life trajectories among members of the same cohort are due to variability across individuals and subgroups (Elder Jr. & George, 2017). Demographic variables are

considered to be integral to explanatory processes in life course research, rather than merely used as descriptive measures in inter-cohort studies. Considered *intra-cohort* analysis by life course researchers, variability of life trajectories can be explained by social resources or lack thereof, social status, and life course transitions. The life course framework recognizes that not all individuals within a cohort are exposed to a historical change or impacted in the same way; thus, gender identity, race, ethnicity, and SES are integral variables to understanding the effects of broad social changes on the lives of individuals. In its application to IPV research, intra-cohort variability may explain access to vital resources for safety planning and help-seeking effectiveness.

Limitations of Life Course Framework

Critics of life course perspective state there is some debate about whether social institutions and systems shape individuals or whether the individuals as a collective shape the social institutions and systems (Elder Jr, 2006). However, the life course perspective suggests there is a dynamic relationship between systems and individuals which would address this criticism. Of course, this does make it difficult to determine causality in research. Some critics of life course also question how salient age is in the course of human life (Settersten, 2003). That is, does aging impact human development as significantly later in life compared to younger life? This argument appears to stem from ageist assumptions that older adults are set in their ways and do not have the ability to develop and change over time. This assumption is counter to social work values and ethics that place self-determination at the forefront of human rights.

Applying Life Course Framework to IPV Research

Generally, when researchers study across the *life span* or *life course* they are examining different age groups or age cohorts cross-sectionally rather than individuals across their own lives. While some studies have pointed to differences in IPV between age groups, very few researchers have looked at how IPV changes across the life course. The life course framework is an ideal fit for IPV research among older adult women, as it offers a perspective for looking at victims of abuse by interpreting their individual and family transitions, or life events, as part of a continuous, dynamic process of lifetime change (Elder Jr. & George, 2017). This framework can be used to identify environmental factors, socialization experiences, and individual characteristics, and how these domains have shaped individuals' viewpoints of family relations and their expectation of support from kin. Additionally, understanding these domains can help researchers understand an individual's positive and negative experiences with help-seeking at public agencies and bureaucratic institutions, which are integral to social work practice and research (Hareven, 1994).

A few recent studies suggest that incorporating life course framework may be useful in understanding IPV across the life span to address limitations in current data. For instance, Bookwala and colleagues (2005) studied gender and aggression in marital relationships over the lifespan and looked at physical aggression within the last year and conflict resolution strategies between married partners. A nationally representative sample of 13,017 individuals were randomly selected to complete interviews. They found a decrease in physical aggression between age groups (inverse relationship with age), with women more likely to sustain injuries compared to men. Though this data is useful

for getting a better understanding of prevalence and type of abuse between age groups, this study was not able to utilize a true life course perspective because the data is categorically speaking about different age cohorts. This study could be strengthened if the researcher was able to examine how aggression changes over each individual's lifespan, rather than between age cohorts. There may be historical differences and social norms that can account for the differences in outcomes between age groups, or perhaps there is a process occurring as the women age that results in different outcomes. The older cohorts may define violence differently. The older cohorts may be experiencing more psychological violence. By comparing different age groups rather than life trajectories, the researcher cannot account for these historical and social norm differences.

Despite its potential, applications of LCT to research examining IPV among older adult women are rare. The few studies that have used LCT highlight the importance of considering timing and persistence of violence across the life course. Band-Winterstein and Eisikovits (2009) used LCT to examine violence in partners between the ages of 60 and 84. By examining violence over the span of the marriages, the researchers found four clusters of violence: (a) violence is continuous; (b) violence occurs in episodes; (c) violence transitions to different types of abuse; and (d) violence escalates due to a partner's chronic and terminal illness. In all four clusters, violence occurred over the life course and could be overt or covert. More recently, the researchers noted that when comparing older women to younger women, older women experienced a transition from physical violence to emotional violence over time and felt an obligation to tolerate abuse for the sake of family (Eisikovits & Band-Winterstein, 2015). These older women,

however, felt as if they had lost their lives to suffering in the relationship throughout their adulthood.

A recent study examining the life span of victimization looked at the prevalence of abuse at each life stage by type of abuse (McDonald & Thomas, 2013). Adults aged 55 years or older were asked about five types of victimization (neglect, physical, sexual, psychological, and financial) and their occurrence over the life course in three cohorts: childhood, young adulthood and older adulthood. Fifty-five percent of older adults reported abuse during their childhood, and 34.1% reported abuse during young adulthood. The study analyzed whether early life stage abuse predicted later-life victimization and found that abuse in childhood increased the risk of experiencing abuse in older adulthood. LCT suggests that turning points are considered major directional changes or discontinuities in a trajectory (Settersten, 2003). It is possible that child abuse is a major turning point during younger years and could set the individual on an unusual trajectory of abuse that carries through until later life. Additionally, McDonald and Thomas (2013) found a substantial number of participants indicating abuse at every life stage.

The impact of historical change on various outcomes is typically examined by using age and cohorts as a proxy. Researchers have found that women of different age cohorts may experience different types and degrees of abuse and may experience violence for different amounts of time over the life course (Rennison, 2001; Wilke & Vinton, 2005; Zink et al., 2003). Additionally, women from different age cohorts may have contrasting opinions regarding whether or not to discuss violence with formal and/ or informal support systems. Older women born before 1950 grew up during a time when

different types of abuse (child, IPV, elder) were not discussed or recognized (Zink et al.,

2003). Women experiencing this period effect may have sought help earlier in life when

institutions did not recognize abuse or provide support for victims (e.g. spiritual

advisors), which may discourage women from seeking help in later life. In addition, age

effects, such as adverse health conditions more common in older age, result in

dependency on abusers or a feeling of obligation to care for a frail partner due to social

norms. Additionally, age effects may explain feelings of fear or loneliness (Eisikovits &

Band-Winterstein, 2015; Winterstein & Eisikovitz, 2005; Zink et al., 2003). Older

women may not believe they will find partnership or companionship if they leave their

partner later in life. Though older women face similar challenges to younger women

when leaving abusive relationships, cohort, period, and age effects exacerbate risks and

challenges among older adult women.

Additional research on IPV among older women should focus on identifying and

unraveling age, cohort, and period effects related to help-seeking barriers. Age, cohort,

and period effects are confounding variables; it is important to carefully consider each

variable when interpreting results. For instance, a researcher may attribute a period effect

to an outcome that is actually a result of a combination of age and cohort influences (Bell

& Jones, 2015). There may be historical differences and social norms (e.g., definitions of

violence) that can account for lack of help-seeking between age groups; or perhaps

barriers associated with the aging process (e.g., deteriorating health) impact help-seeking

behavior. LCT provides a framework to conceptualize research questions related to the

unique challenges and barriers for older adult women experiencing IPV.

As it relates to IPV across the life course, the concept of linked lives allows for the consideration of patterns of violent interpersonal relationships over the life course from childhood through older adulthood. Wang and Dong (2019) examined the interconnectedness of life course violence among experiences of child maltreatment, IPV and EM within a Chinese older adult population and found psychological, physical, and sexual victimization to be persistent across the life course. These results suggest that individuals experiencing victimization in older adulthood have likely experienced violence previously. Research using a life course perspective can further examine this finding by considering the impact of adverse childhood experiences, such as violence, on life trajectories.

Roberto and McCann (2018) applied LCT to a group of older women that had left their partners to examine when women decided to seek help to end their relationship and what resources were most helpful. Many participants reported incidents of childhood abuse and trauma, suggesting that earlier experiences of victimization may make individuals vulnerable to abuse later in life. Participants also reported multiple instances of violent intimate relationships over their life course, rather than one violent relationship or episode. This is consistent with previous studies that indicated older women are more likely to remain in their violent relationships and the duration of violence is longer (Roberto et al., 2013; Wilke & Vinton, 2005).

Measurement Instruments for IPV Research Applying LCT

The few studies that examine IPV in older adult populations have generally utilized the same tools to measure instances and risk of violence among older adults (Cook et al., 2011). However, these tools may not capture how women perceive and

define violence in their age cohort. Different age cohorts (such as the oldest-old in their 80s and the younger-old in their 60s) may have different definitions of violence and trauma based on their specific historical and social developments during their younger years (Cook et al, 2011; Rennison & Rand, 2003). Additionally, cross-sectional data collection with older adult women rely on their recall of past instances of violence, which may be difficult for older adult women depending on their capacity or memory (Yoshihama & Bybee, 2011). While longitudinal research would be best to examine the phenomena of IPV across the lifespan, the use of different tools to promote recall of events may assist in more reliable data collection for more feasible, cross-sectional studies.

Acierno (2003) argues for an assessment of violence against older adults that mirrors assessment in interpersonal violence literature in younger adults. According to Acierno, close-ended questions that behaviorally define interpersonal violence should be used in assessment tools for older adults. Interviewing alone is also important since it is a sensitive topic. When examining IPV among older adults, researchers should include survey items that assess previous experiences of violence and other types of trauma, such as Adverse Childhood Experiences (ACEs), to further understand how previous trauma and violence is linked to IPV across the life course. Additionally, measures of social support and help-seeking are important constructs to capture the nature and extent of social relationships throughout the life course for older adult women experiencing IPV.

Adverse Childhood Experiences

Child abuse is connected to a greater likelihood of domestic violence for women (Cohen et al., 2000) and women who have experienced abuse in both childhood and

adulthood have poorer health, fewer social supports, and higher depression rates (Felitti et al., 1998). Among both men and women, prior childhood sexual abuse correlates with domestic violence, which is itself related to poor mental health outcomes (Afifi et al., 2009). The experience of domestic violence is also a category of ACE, pointing to a possible intergenerational cycle of adversity (Felitti et al., 1998). In a study of multigenerational victimization, Noll and colleagues (2009) found that mothers who have been abused are more apt to have dropped out of high school and to have experienced domestic violence and negative mental health outcomes. Further, witnessing parental violence during childhood can increase the chances of being a victim of IPV in adult life, regardless of having been directly exposed to domestic violence as a child (Madruga et al., 2016).

As the ACE study demonstrates, cumulative risk can have a greater impact on overall health (Felitti et al., 1998). A strong connection has been identified between early experiences and optimal health, wellness, and life opportunities across the life course (Ports et al., 2016). Children and adolescents exposed to early trauma, such as abuse and neglect, are at increased risk for experiencing violence across their life span with accumulating risk for poorer health and social outcomes (Wilkins et al., 2014). Understanding the overlapping causes of violence and why some individuals are at greater risk for experiencing violence across their life can help practitioners and policymakers address and prevent violence across all the stages of life. Systemic risks such as poverty and oppression may be compounded, or moderated, by interpersonal relationships such that negative experiences may greatly increase risk of later life health issues.

Life History Calendar for Collecting IPV over the Life Course

There are measurement challenges in gathering data about women's IPV experiences over the life course. Some women experience IPV by a single partner while other women experience IPV by multiple partners. IPV can stop and restart throughout the life course, whether by the same partner or different partners. Therefore, questions such as "have you experienced violence within the last year" do not provide an inclusive representation of violence experienced over the life course. This question also lacks information about the severity of violence experienced, which can also differ over time. Additionally, some women will answer "no" to a single question if they do not define violence in the way that question is phrased. A full range of behaviorally specific indicators of violence against older women is recommended to more accurately capture various types of IPV experienced in addition to measuring the severity of violence (Rosay & Mulford, 2017).

Data on multiple time points are needed to examine trajectories of violence across the life course. Life History Calendars (LHC), also referred to as Life Event Calendars, are well-suited to collect data at various time points. LHCs utilize a calendar format within a semi-structured interview to assist respondents with first recalling memorable events that are typically more easily recalled, such as the birth of a child, that then serve as memory aides for less easily recalled information (Freedman et al., 1988; McPherson et al., 1992). These events are recorded in a pre-printed calendar in view of the respondent. This allows the respondent to use information visibly recorded on the calendar as memory cues in recalling types of events and timing of events that are subsequently asked about during the interview.

The LHC method allows researchers to use cross-sectional samples to collect retrospective longitudinal data, which is both efficient and cost-beneficial (Sutton, 2010). The LHC method is flexible; researchers have used LHC to collect retrospective data with study periods ranging from several days to several decades (Belli et al., 2009; Sutton, 2010; Lin et al., 1997). The semi-structured interview format allows the researcher to collect covariate data (e.g., schools attended; places lived) while simultaneously building rapport with the participant. The LHC has been used in studies examining violence among youth, stressful life events, and fertility history and has been shown to be an effective tool for collecting sensitive information (Belli et al., 2009). Additionally, the LHC has been used with younger women experiencing IPV with improved recall on reports of frequency and severity of violent events (Campbell et al., 2009; Hayes, 2016). This suggests using the LHC may help improve recall for older participants needing to remember a larger span of years with which to remember timing, duration, and frequency of events.

Despite the utility of the LHC to advance the study of IPV over the life course among older adults, its use is rare. The LHC has been used in only a handful of studies examining IPV over the life course (i.e., Yoshihama et al., 2002; Yoshihama et al., 2005; Yoshihama et al., 2006). In this sequence of studies, the LHC was used to conduct cross-sectional, large-scale surveys of IPV with younger and older adults. LHC responses were compared to a similarly sampled group of women who completed a structured interview (Yoshihama et al., 2002; Yoshihama et al., 2005). Compared to women completing the structured interview, women who completed the LHC method were able to recall IPV experiences starting at a younger age and a higher number of IPV events. The

participants' retrospective responses to IPV events, including timing, duration, and severity, were found to be highly reliable using the LHC. Yoshihama and colleagues (2006) then used the LHC to examine the temporal relationship between IPV and financial assistance (such as welfare) among a sample of low-income women. Using this method, cumulative past IPV events were found to be associated with financial assistance within a given year; however, previous receipt of financial assistance did not increase the likelihood of subsequent IPV events. The ability to test the temporal sequence of events using the LHC provided researchers with evidence to support the suggestion that IPV leads to poverty, which challenges the assumption that poverty causes IPV.

There are a number of factors to consider when gathering retrospective data requiring recall of their experiences of IPV from older adult. Without any use of primers to assist with memory retrieval, conventional survey interview methods result in fewer reports of IPV events (Yoshihama & Gillespie, 2002). In IPV research, it is well-known that self-report is the most reliable way to gather IPV event data; therefore, maximizing memory retrieval is necessary to gather accurate data. Researchers should first ask respondents to report memorable events that are more easily recalled and may be less sensitive, which will then serve as memory aides for IPV events (Freedman et al., 1998; McPherson et al., 1992). Researchers can cross-check the timing of events over several domains, such as housing changes, schooling changes, or similar related life events while reviewing the calendar with the participant (Yoshihama & Bybee, 2011). This allows for a visual representation of events that are more easily recalled, and these events subsequently serve as reference points. These less sensitive events act as anchors to assist with recall, which aims to prevent incomplete and/or inaccurate recall of events that

compromise the validity of data. The display of the calendar itself allows the participant to identify any inconsistencies in timing of events. Additionally, detailed sequences of events are more easily recorded with the LHC compared to a conventional questionnaire that may record monthly sequences over a period of years, a method that is noted as a burden to the respondent (Freedman et al., 1998). For older adult respondents the recall period can be more than 40 years, which may lead to difficulty in recall and respondent fatigue. The LHC can reduce fatigue and assist with recall, leading to more accurate data collection and analysis.

The semi-structured interview format allows for participants to work through the calendar in a way that allows for their best recall (Yoshihama & Bybee, 2011). For example, interviewers can ask respondents about their first intimate partner and then subsequent partners. The semi-structured interview format allows the participant to either start with their current or more recent partner or start with their first partner and move forward. Participants can also move fluidly forward and backward as needed, using less sensitive time points as memory anchors or cues. This flexibility allows researchers to collect rich retrospective data on the experience of victimization across the life course among older adult women. The LHC is also useful in addressing ethical considerations relevant to IPV research across the life course. As noted by Yoshihama and Bybee (2011), longitudinal research that follows participants who experience IPV without intervening may compromise participants' safety; however intervening would not allow the researcher to examine the life course of IPV. The LHC method allows for a flexible, ethical review of the trajectory of IPV over the life course among older adult women.

Summary

IPV is cyclical and recurrent in women's lives. Though researchers have pointed to various severe consequences of victimization, such as increased risk for mortality and poorer health, there is a lack of understanding of how IPV risk changes over the life course. With most studies asking women about experiences of victimization within the last 12 months, researchers are unable to achieve an accurate snapshot of victimization over the life span. Asking an older adult about her life experience of victimization is crucial in order to examine the complexities of the life cycle of abuse. For instance, some victims suffer victimization from the same partner over a long period of time, while others experience different types of violence from different partners over a long period of time. Research examining violence across the life course has the potential to provide a more accurate understanding of violence against women of all ages, and provide insight into the experience of IPV and effective help-seeking behaviors among older adult women.

CHAPTER 3

METHOD

To examine this study's Life Course theory-driven exploratory research questions, a quantitative methodology was used. Cross-sectional, semi-structured interviews utilizing the LHC (Freedman et al., 1988) were completed with 52 cisgender female older adult participants individually either in-person or using the cloud-based Zoom Video Communications video conferencing software platform. Participants self-selected into the study, resulting in a non-probabilistic convenience sample. IPV and IPV-related help-seeking trajectories over the life course were examined using generalized linear mixed modeling, which is a type of multilevel modeling that can be used to examine binary outcomes with repeated measures (Grimm, Ram & Estabrook, 2017).

Life History Calendar Study Design

Due to feasibility and ethical considerations, this study adopted a cross-sectional retrospective design in capturing IPV history over the life course. Following participants who experience IPV without providing assistance to the participant may compromise their safety and therefore violate the researcher's professional ethical values and principles specified in the NASW Code of Ethics (2017). However, intervening would not allow the researcher to accurately capture experiences of IPV over the life course (Yoshihama & Bybee, 2011). Gathering data from older adult women through recall of their previous experiences of IPV allows for an examination of IPV over the life course while allowing the researcher to provide resources if there is a current need for intervention and support.

Primary data collection was utilized given the lack of data sources that can provide reliable and accurate data on IPV events over the life course. IPV is generally completed in private and frequently occurs without report, which results in incomplete data sources from hospitals, police records, and APS (Yoshihama & Bybee, 2011). Older adult women with current or previous IPV experiences participated in semi-structured interviews. Data were not collected from any other source other than the participant. It is not feasible nor ethical to collect data from the identified intimate partners over the life course who are noted as perpetrators of violence. Ethically, it would not be safe for the respondents to have contact with past perpetrators. Given that social desirability bias would likely prevent perpetrators from disclosing abuse events, it would not be a useful way to collect additional data about IPV events over the life course (Arias & Beach, 1987; Dutton & Hemphill, 1992).

Self-report from respondents is currently the best viable option for gathering data on IPV experiences over the life course. Self-report of IPV experiences from women have not been found to be associated with social desirability bias (Arias & Beach, 1987; Dutton & Hemphill, 1992; Saunders, 1986). Survey methodology research has identified that the longer the recall period the more likely inaccuracies occur and the more likely events are missed (Rubin & Wenzel, 1996; Thompson et al., 1996; Wagenaar, 1986). Using conventional survey interview methods without any use of primers to assist with memory retrieval results in lower reports of IPV events (Yoshihama & Gillespie, 2002). Since self-report is the most reliable way to gather IPV event data, maximizing memory retrieval is necessary to gather accurate data. To address concerns regarding recall, the researcher will be utilizing the LHC method to collect data (Freedman et al., 1988). The

LHC method has been applied to very few studies of IPV over the life course, but shows encouraging results in cross-sectional, large-scale surveys of IPV with adults of varying ages (Yoshihama et al., 2002; Yoshihama et al., 2005; Yoshihama et al., 2006).

The LHC method utilizes a calendar format within a semi-structured interview to assist respondents with recalling memorable events that are relatively easily recalled, such as the birth of a child, that then serve as memory aides for less easily recalled information (Freedman et al, 1988; McPherson et al., 1992). Events were recorded in a pre-printed calendar in plain view of the respondent or in an electronic copy shared via Zoom's screen-sharing tool, which allowed the respondent to use information already recorded on the calendar as memory cues in recalling events and timing of events that are subsequently asked about during the interview.

Due to the sensitivity of the events asked about in IPV research, a surveyor first asked respondents to report memorable events that are easily recalled and less sensitive, which then served as memory aides to facilitate recalling IPV events (Freedman et al., 1998; McPherson et al., 1992). The surveyor then cross-checked the timing of events over several domains, such as housing changes, schooling changes, or similar related life events (Yoshihama & Bybee, 2011). The display of the calendar, whether printed out during in-person interviews or visible via the screen-sharing feature in Zoom, helped identify inconsistency in timing of events. Detailed sequences of events were more easily recorded with the LHC compared to a conventional questionnaire that would record monthly sequences over a period of years and becomes a burden to the respondent (Freedman et al., 1998).

The semi-structured interview allowed for each respondent to walk through the calendar in the way that allowed for best recall. Respondents were asked about relationship history over the life course including their first intimate partner and then subsequent partners. A semi-structured interview format allowed for the respondent to start with their current or more recent partner at time of interview or start with their first partner and move forward chronologically. Respondents could also move fluidly forward and backward as needed. Prospective, longitudinal research utilizing survey methodology is not feasible for many researchers. The LHC method is one solution to help researchers collect rich data on the experience of victimization across the life course among older adult women.

Procedure

Interviews were conducted in-person with three participants from January 2020 through February 2020. In-person interviews ceased after this time due to the COVID-19 pandemic. Forty-nine interviews were then conducted online using Zoom video conferencing software with participants from August 2020 through October 2020 to protect the safety of the participants and researcher. Participants residing in the Southwestern United States (Arizona, California, Colorado, New Mexico, Oklahoma, Texas, and Utah) were invited to complete an interview if they identified as female, were 60 years of age or older, were community-dwelling, spoke fluent English, and experienced at least one IPV event at some point throughout their life course.

Participants were primarily recruited through ResearchMatch, which is an online database of volunteers interested in joining research studies (Harris et al., 2013). Participants that met inclusion demographic criteria (e.g. lived in the Southwestern

United States, were female, and aged 60 years of age or older) were selected from the ResearchMatch database to receive a short email with study details (see Appendix A). Participants who chose to gather more information about this research were contacted by a surveyor who sent an email to the potential participants with further study details (see Appendix B). Flyers (see Appendix C) were distributed at the public entries of community centers and senior centers in the greater Phoenix metropolitan area. To accommodate varying definitions of violence due to cohort differences and cultural norms and to also address the concern that women may not want to be identified as having experienced IPV in a public space, public advertising targeted all female-identifying older adults aged 60 or older. The advertisement stated that the researcher was interested in intimate relationships over the life course. If a prospective participant indicated interest, the researcher then determined if inclusion criteria were met with a criterion tool (see Appendix D) completed over the phone or via email. The criterion tool included questions adapted from the Abuse Assessment Screen (AAS), which is a reliable and valid clinical instrument that measures the frequency, severity, and perpetrator of abuse against women (Soeken et al., 1998). After confirming a participant met the inclusion criteria, an interview time was scheduled.

Institutional review board approval was obtained for this study (see Appendix E) . Prior to starting the interview, the researcher read the consent form (see Appendix F) out loud with the participant whether meeting in-person or over Zoom. For Zoom interviews, the informed consent document was also shared via the screen sharing function. Participants were informed their information would remain confidential and not be shared. Participants were advised that their participation was voluntary and they could

stop the interview at any time. Participants were told that fatigue or emotional discomfort

may occur during the survey. Participants were told the interview would be audio

recorded only if they chose to opt-in to recording. Audio-recording was optional and did

not disqualify participants from the study if they did not opt-in to recording. After

repeating their understanding of the informed consent document to the researcher,

participants signed the informed consent document either in-person or via their electronic

signature on the electronic consent form if meeting over Zoom. Participants checked a

box to opt-in to audio recording if they agreed. A link to the electronic consent form was

emailed to participants. The researcher verified signature of electronic consent prior to

starting data collection. Participants were compensated with a $20 gift card or e-gift card

from the merchant of their choice (e.g. Amazon) after completing the study.

The researcher met one-on-one with each respondent either in-person or via Zoom

to complete the LHC (see Appendix G) and additional questionnaires (see Appendix H)

after completing informed consent procedures. Semi-structured interviewing was

conducted utilizing the LHC (Freedman et al., 1988). Benefits of in-person interviewing

include having time to build rapport with the participant to gather accurate data about

very sensitive information, and being able to answer respondent questions, probe for

adequate answers, and assist the respondent with following somewhat complex

instructions involve the Life History Calendar (Yoshihama & Bybee, 2011). The semi-

structured interview format allows participants to provide their own definitions of

violence based on their distinctive experiences throughout their life course that may not

be captured in current structured interview tools. For participants that opted-in, audio

recordings were completed of the semi-structured interviews for the purpose of obtaining qualitative data for future analysis. This information was not used for this analysis.

A respondent booklet (see Appendix I) was used to assist with data collection. The booklet includes the list of questions asked with a list of responses (if applicable) for years of schooling, years of residential moves, behavior-specific list of types of IPV, and help-seeking behavior. The psychosocial survey was completed online via the Qualtrics survey tool. The researcher first asked questions about various life domains such as housing, schooling and employment to help the respondent recall IPV events. Then, the researcher asked about relationship history and IPV events. Relationship history can be an important memory cue for IPV event recall (Yoshihama et al., 2002). Though the researcher asked about the first intimate partner, the respondent was free to discuss partners in the order that was most comfortable for her. The semi-structured format allowed for the respondent to discuss her most recent partner and work backward from that relationship, or the respondent could go in chronological order. The semi-structured format also allowed for participants to move back and forth across the calendar as memories of events are recalled. Initials or first names of partners were recorded on the calendar. Then, the researcher asked about IPV experiences within each relationship mentioned. To help with recall, the researcher asked at what age did the respondent first experience IPV based on the behavior-list and at what age it recurred if applicable. For in-person interviews, the LHC was a paper calendar that the researcher recorded answers on with the respondent. For Zoom interviews, the LHC was an electronic calendar that was shared via the screen sharing tool for the respondent to view while the researcher recorded answers.

After completion of the LHC, the respondent completed a short survey comprised of the Adverse Childhood Experience (ACE) questionnaire (10 items) and basic demographic information. A self-reported health questionnaire, the SF-20, was included in the psychosocial survey for future analysis. After completion of the interview, the researcher provided an option to receive resources for IPV to each respondent if they stated they were currently experiencing IPV.

Respondent Burden

Long interviews and interviews including sensitive and emotionally-taxing information may pose a physical and emotional burden to the respondents (Rubin & Babbie, 2005). Effort was made regarding making the questionnaire as short as possible while also including the variables necessary for analysis. A short form for help-seeking behavior was utilized rather than the long form scales to lessen fatigue and burden. Additionally, older respondents or respondents with a higher number of events (moving, schooling, employment) may cause fatigue prior to asking about IPV events. Therefore, a small number of life event domains was selected (Freedman et al., 1988; Yoshihama & Bybee, 2011). Those domains were selected due to their association with the occurrence and timing of IPV and if those events would help with recall. The visual representation of a life course of abuse may be distressing to respondents; therefore, the researcher had materials regarding assistance programs and counseling resources to provide the respondent if needed.

Vulnerability

Vulnerable adults may participate out of a sense of obligation to the researcher or may fear reprimand if they do not participate (Duffy, 2002). As previously stated, to

address this the researcher read the informed consent document out loud with the participant and assured the individuals they could stop at any time. This researcher completed check-ins throughout the data collection process to prevent the older adult participant from feeling as if they could not interrupt the researcher.

Vulnerability of older adults may include mild cognitive decline due to natural aging processes. Mild cognitive decline does not prevent participants from making informed decisions by legal standards, but this researcher took great care in ensuring that there was understanding of information and research implications (Moye et al., 2004). Direct informed consent may not be possible for older adults with severe cognitive impairment. For the purposes of this study, severe cognitive impairment was an exclusion criterion. Though the LHC method assists with memory recall for older adults, whether this method is appropriate for adults with severe cognitive impairment still needs to be studied. Therefore, the researcher did not complete interviews with adults that would fit the APS definition of *vulnerable* in the state of Arizona. The researcher did, however, ask the participant to restate the study protocol in her own words to ensure informed consent was achieved (McGuire, 2009).

<div align="center">**Measurement**</div>

Life History Calendar

The LHC lists life events on the calendar's vertical axis and time units on the horizontal axis. The columns were color coded to help the interviewer distinguish between columns to lessen risk of recording information in the incorrect column.

The vertical axis of the LHC used in this study included the following variables: *schooling, employment, children, residential moves, relationship, IPV questionnaire, IPV frequency, help-seeking behavior.*

The horizontal axis of the LHC used in this study included the following variables: *respondent's age* and *corresponding calendar year*.

Validity and Reliability of LHC

Incomplete and/or inaccurate recall of events and IPV experiences compromise the validity of the data. For many respondents, the recall period was more than 40 years. To aid in recall of IPV experiences and prevent respondent fatigue, less sensitive events (such as birth of a child, employment and schooling) were first asked about and recorded in the life calendar. These less sensitive events acted as anchors to assist with recall. This method has been found to be better at assisting respondents with more accurate recall of events. The calendar itself acted as a visual tool providing situational context for the respondent to recall whether an event took place and at what time in the life course. The visual representation in calendar form also helped the researcher and respondent to clear up discrepancies.

Yoshihama and Bybee (2011) assessed the reproducibility of the LHC with a random probability sample of women through two separate interview periods. Test-retest correlation of number of life partners with which respondents experienced IPV was high ($r = .80$). Test-retest agreement on whether the respondent reported having experienced IPV was high ($r = .80$), with a percentage agreement ranging from 80% for sexual violence to 95% for physical violence (k range .53 - .71). Test-retest correlation for age at first experienced physical violence by an intimate partner was also high ($r = .92$).

Correlations were lower for threats/harassment (r = .62) and for sexual violence (r = .59). Duration of physical and sexual violence events had high test-retest reliability (r = .88; 85% agreement) as well as duration of threats/harassment (r = .70; 80% agreement).

Yoshihama and Bybee (2011) also assessed test-retest reliability of sequence of events, such as the first episode of IPV within the timeframe of receipt of welfare benefits and first employment (study variables of interest). The researcher found high agreement between the first and second interview of the two events, with respondents reliably reporting first IPV event occurring before first welfare payment (k = .61, 85% agreement) and before first employment (k = .50, 81% agreement). The number of IPV types experienced within a relationship for threats/harassment was high (r = .81) and was slightly lower for physical/sexual violence (r = .62). Respondents had a 75% agreement for reporting number of physical/sexual violence types in each year of their first relationship, and 83% agreement in threats/harassment in each year of their first relationship.

Yoshihama and colleagues (2005) compared responses using the LHC method to a similarly sampled group of women who completed a structured interview. Women completing the LHC method were able to recall IPV experiences starting at a younger age and a higher number of IPV events compared to the women completing the structured interview. Women's retrospective responses to experiences of IPV, including timing, duration, and severity, were found to be highly reliable using the LHC method.

Yoshihama and Bybee (2011) assessed the content validity of LHC by looking at the degree to which reports of IPV experiences were associated with variables that have been found to be linked to IPV. Women reporting a history of physical abuse during

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childhood indicated a significantly higher number of IPV experiences over the life course compared to women without a history of childhood physical abuse (2.1; $t = 3.1$, $p = .002$). This finding is consistent with previous studies of childhood abuse (Arata, 2002).

Items in the LHC

Residential Moves. Residential moves were measured by asking, "Let's begin by talking about where you lived during those years. In what city and state were you living when you turned 16." When that was recorded the researcher asked, "Until what month and year did you live there?" If the respondent's residence changed, the interviewer asked, "Where did you live next?" These two questions were asked until geographic residence was established for the entire period. Responses were coded as: *change in residence (1)* and *no change in residence (0)*.

Schooling. Schooling was measured by asking, "Now let's talk about schools you may have attended during these same years. What school were you attending when you turned 16? Until what year did you attend that school? Did you attend any other schools after this time period? Please tell which years you attended each school." The following options were included to prompt participants to indicate what school was attended and when: *high school (1), community college (2), trade school (3), four year college or university (4), graduate or professional school (5).* Schooling was then recoded into a binary variable as: *not currently attending school (0)* and *attending school (1)*.

Employment. Employment was measured by asking, "Now let's talk about places you may have worked during these same years. What type of employment did you have when you turned 16? Until what year were you employed there? Where did you work next? These two questions were asked until employment was established for the entire

period. For analysis, employment was recoded into a binary variable as: *not currently employed (0)* and *currently employed (1)*.

Children. Number of children born or adopted was measured by asking, "Now let's talk about any children you may have had during these same years. Have you adopted and/or given birth to any children? In what year did you have your first child?" This was repeated until all children were included within the entire period. During each year, birth or adoption of a child was coded as: *birth/adoption of a child (1)* or *no births/adoptions (0)*.

Relationships. Relationships were measured by asking, "Now let's talk about intimate partnerships you may have had during these same years. When did you have your first intimate relationship? Are there any time periods when you were generally dating but not involved with any one person in particular?" Intimate relationships were self-defined by the participant, though examples such as *boyfriend/girlfriend* and *spouse* were given. The researcher asked about time periods in which the participant was dating but not in a relationship with anyone in particular. Relationships were coded in chronological order, with the first relationship coded as *1*, the second relationship coded as *2*, and so forth.

IPV events. To aid with recall, the researcher asked "At about what age did you experience mistreatment for the first time?" followed with "Did you experience fear or mistreatment in other years?" IPV events were measured using behavioral indicators of abuse commonly used in IPV research. Participants were provided with examples of three types of IPV: physical, psychological, and sexual. Physical violence was assessed by asking whether the participant: *had a bruise sprain, or felt pain after a fight with my*

partner; was pushed, shoved, or slapped by my partner; and *was punched, kicked or dragged by my partner.* Psychological violence, which included verbal abuse and controlling behaviors for this study, was measured by asking whether the participant: *was shouted at or yelled at by my partner; was insulted or shamed by my partner, felt threatened by my partner;* and *was under surveillance or had activity restricted by my partner.* Sexual violence was measured by asking whether the participant's partner: *pressured or coerced participant to have sex; used force to make participant have sex;* and *refused contraception.*

To address personal respondent differences in definitions of violence that may not be captured in the previous examples, the researcher asked "Were you ever afraid of any partners?" The researcher then categorized any examples of fear that fit within the three types of violence collected. Financial abuse was included under psychological violence as a controlling behavior. Response options were coded as *Yes IPV event experienced (1)* or *No IPV event experienced (0)* to capture any physical, psychological, or sexual IPV event that occurred in each calendar year. These yes or no response options were recorded for each type of violence (physical, psychological, sexual), to capture years where a respondent may have experienced psychological violence but not physical violence, for example. Frequency was measured by asking how often the abuse occurred during that time period, with the following response options: *daily (4), weekly (3), monthly (2), yearly (1).*

Help-seeking Behavior. Help-seeking behavior was assessed using the help-seeking behavior questions from the 1999 GSS (Barrett & Pierre, 2011). These questions ask about forms of helps out in direct response to violence. Help-seeking behaviors were

assessed for each year of reported IPV violence in the LHC. Four forms of informal support were assessed by asking, "Other than to the police, did you ever talk to anyone about (these) incident(s) such as…" with the following options: *a family member; a friend or a neighbor; a coworker; a minister, priest, clergy, or other spiritual advisor"*.

Nine forms of formal support were assessed by asking, "Did you contact or use any of the following services for help because of the violence, such as…" with the following response options: *reported to the police; talked about the incident(s) to a doctor or nurse; talked about the incident(s) to a lawyer; contacted a crisis center or crisis line; contacted a counselor, psychologist or social worker; contacted a community center or family center; contacted a shelter or transitional home; contacted a women's center; contacted court-based service..* The researcher asked participants about their perceived response from help-seeking for future analysis; however, this data was not analyzed for this study.

Dummy variables were created for each specific type of informal and formal help (*did not talk about the incident to this source (0)*, *did talk about the incident to this source (1)*) in each year help-seeking behavior was reported.

Adverse Childhood Experiences

A brief ACE measure was utilized to reduce respondent burden. The BRFSS ACE module is an 11-item self-report measure that is a shortened and adapted version of the original ACE study questionnaire (Meinck et al., 2017). The 11-item questionnaire asks about experience of eight types of childhood adversities that may have occurred before the respondent was 18 years of age: sexual, physical, and emotional abuse; parental

separation/divorce; incarcerated family members; household substance abuse, domestic violence, and mental illness.

Very few research studies have examined the tool for validity and reliability. A confirmatory analysis of the BRFSS ACE module suggests that the items from this scale can be used to generate composite scores of household dysfunction, emotional/physical abuse, and sexual abuse like the original questionnaire (Ford et al., 2014). Additionally, this study found support for these lower order factors to map onto a higher order factor of childhood maltreatment. Measurement equivalence was demonstrated across gender and age. Good test-retest reliability was found for the BRFSS ACE module (Dube et al., 2003).

Demographics

The following demographic information were collected: *gender (cis or trans), age as of last birthday, race (Caucasian/White, African-American/Black, American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander), ethnicity (Hispanic or Not Hispanic), years living in the United States, current employment (working full-time, working part-time, full-time homemaker/caregiver, unable to work due to disability, retired, unemployed but looking for work), marital status (single/never married, married or in domestic partnership, widowed, divorced, separated), current household income (not sure, $20,000 - $34,999, $35,000 - $49,999, $50,000 - $74,999, $75,000 to $99,999, and over $100,000),* and *whether respondent depends on partner and/or caregiver's income for daily needs (yes, no, not applicable).*

Participants

The interview lasted on average 62.7 minutes after completion of consent procedures (SD = 8.8). All participants (n = 52) were cisgender female. As shown in Table 1, nearly all women were White (94.2%) and reported having opposite gender intimate partners (96.2%). Participants' mean age at the time of interview was 67.7 (SD = 5.4). Most women (75%) reported having attained a bachelor's degree or higher and had at least one child in their lifetime (63.5%). At the time of interview, most women reported being retired (63.5%). At the time of interview, 53.8% of women reported having a yearly income under $50,000 and most women reported their marital status as divorced (51.9%).

Table 1

Sociodemographic Characteristics of Participants at Time of Interview

	M/*n*	*SD*/%	Range
Age	67.7	5.4	60-82
Race			
White	49	94.2%	
Black	3	5.8%	
Ethnicity			
Latinx	2	3.8%	
Employment Status			
Retired	33	63.5%	
Part-time	8	15.4%	
Full-time	6	11.5%	
Disability	5	9.6%	
Marital Status			
Single/never Married	6	11.5%	
Married	15	28.8%	
Divorced	27	51.9%	
Widowed	4	7.7%%	
Household Income			
Less than $20,000	4	7.7%	
$20,000 – $34,999	10	19.2%	
$35,000 - $49,999	14	26.9%	
$50,000 - $74,999	7	13.5%	
$75,000 - $99,999	12	23.1%	
Over $100,000	5	9.6%	
One or more children	33	63.5%	
Education			
High School degree or equivalent	2	3.8%	
Vocational or associates degree	11	21.2%	
Bachelor's degree or higher	39	75.0%	

Note. *N* = 52.

As shown in Table 2, in their lifetime women reported having experienced IPV (inclusive of physical, psychological, and/or sexual IPV) in at least one and up to 45 years ($M = 12.4$, $SD = 10.8$). The age at which women reported first experiencing IPV ranged from 17 to 61 ($M = 29.4$, $SD = 12.3$). Twenty-eight women (53.8%) reported having experienced IPV at age 45 or older, with nine of those women (32.1%) reporting an IPV event at age 45 or older as their first experience of IPV in their life course. Twenty-two women (42.3%) reported having two or more abusive intimate partners over their life course. Twenty-two women (42.3%) reported being in an intimate relationship at the time of interview, and 27.3% (n = 6) of those women reported experiencing IPV within their current relationship at time of interview. All women interviewed via Zoom stated they were in a private room with the door closed, though three women reported their intimate partners were home during the time of interview. Type of IPV-related help-seeking is detailed in Table 3 for all women that sought help, with friends and psychological services (e.g. seeking help from a counselor or social worker) as the most common types of help-seeking. Women were able to indicate more than one type of help-seeking. Eleven women did not seek help of any kind over the life course. Table 4 details IPV-related help-seeking specifically for women aged 45 or older, with psychological services as the most common type of help-seeking.

Table 2

Participants' IPV Experiences Across the Life Course

	M/n	SD/%	Range
Age at first IPV experience	29.4	12.3	17-61
Age at most recent IPV experience	45.2	15.1	18-73
Experienced IPV at age 45 or older	28	53.8%	
First experience of IPV at age 45 or older[a]	9	32.1%	
Years of lifetime IPV[b]	12.4	10.8	1-45
Physical	5.6	8.8	0-42
Psychological	12.3	10.8	0-45
Sexual	4.5	7.3	0-29
Two or more abusive partners in lifetime	22	42.3%	
Currently in an intimate relationship	22	42.3%	
Currently experiencing IPV while in an intimate relationship[c]	6	27.3%	
Sought IPV-related help at any age	41	78.9%	
Sought IPV-related help at age 45 or older[a]	18	64.3%	

Note. N = 52. [a] Reflects number and percentage of participants reporting IPV at age 45 or later (*n* = 28). [b] Reflects years in which one or more IPV experience was reported. [c] Reflects number and percentage of participants currently in an intimate relationship (*n* = 22).

Table 3

IPV-related Help-Seeking Across the Life Course

Type of Help	*n*	%
Informal		
Family	13	25.0
Friend	18	34.6
Spiritual	6	11.5
Formal		
Psychological . Services	20	38.5
Police	12	23.1
Medical	9	17.3
Lawyer	2	3.8
Court	6	11.5
Women's Shelter	2	3.8
Community Resource	2	3.8

Note. n = 41.

Table 4

IPV-related Help-Seeking Age 45 or Older

Type of Help	*n*	%
Informal		
Family	4	22.2
Friend	6	33.3
Spiritual	2	11.1
Formal		
Psychological Services	10	55.6
Police	4	22.2
Medical	2	11.1
Court	3	16.7
Women's Shelter	1	5.6
Community Resource	1	5.6

Note. n = 18. No participants age 45 or older sought help from a lawyer.

Analysis Plan

Q₁: What are the characteristics of trajectories of IPV by type across the life course among older adult community-dwelling women in the Southwestern United States?

Generalized linear mixed modeling (GLMM) was conducted to analyze trajectories and examine covariates of IPV risk. GLMM allows the researcher to analyze individual and collective trajectories and examine IPV risk and has been used in LHC analysis with dichotomous outcome variables (Grimm, Ram, & Estabrook, 2017; Yoshihama & Bybee, 2011). Three separate models were run to examine type of IPV (*physical, psychological, sexual)* with Level 1 time-varying covariates *age* (linear effect) and *age squared* (curvilinear effect) and Level 2 time invariant covariate *age at interview*. Due to lack of previous research on differences in trajectory of IPV over the life course based on IPV type, no hypotheses were delineated across the types of IPV. These models were analyzed using the glmer function in the lme4 package (Bates et al., 2014) in *R version 4.0.3* software (R Core Team, 2020).

Q₂: What are the characteristics of trajectories of IPV by frequency across the life course among older adult community-dwelling women in the Southwestern United States?

GLMM was conducted to analyze the trajectory and examine covariates of IPV frequency risk. The frequency outcome variable was dichotomized into high frequency (*daily, weekly*) and low frequency (*monthly, yearly, no IPV reported*). One model was run to examine frequency of IPV (*high frequency = 1; low frequency = 0)* with Level 1 time-varying covariates *age* (linear effect) and *age squared* (curvilinear effect) and Level 2 time invariant covariate *age at interview*. Due to lack of previous research on

differences in trajectory of IPV over the life course based on IPV frequency, no hypotheses were delineated. This model was analyzed using the glmer function in the lme4 package (Bates et al., 2014) in *R version 4.0.3* software (R Core Team, 2020).

Q3: Can trajectories of IPV across the life course be predicted by ACE scores?

GLMM was conducted to analyze trajectories and examine covariates of ACE scores and IPV experience based on age and type of violence. GLMM allows the researcher to analyze changes in the probability of IPV events and test whether changing probabilities are associated with ACE score and type of violence (Grimm, Ram, & Estabrook, 2017; Yoshihama & Bybee, 2011). Three separate models were run to examine each type of IPV (*physical, sexual, psychological)* with Level 1 time-varying covariates *age* (linear effect) and *age squared* (curvilinear effect)*,* and Level 2 time invariant covariates *age at interview* and *ACE score*. A separate model was run to examine frequency of IPV (*high, low)* with Level 1 time-varying covariates *age* (linear effect) and *age squared* (curvilinear effect)*,* and Level 2 time invariant covariates *age at interview* and *ACE score*. Due to lack of previous research on differences in predicting trajectories of IPV over the life course based ACE score, no hypotheses were delineated across the types or frequency of IPV. This model was analyzed using the glmer function in the lme4 package (Bates et al., 2014) in *R version 4.0.3* software (R Core Team, 2020).

Q4: Can trajectories of IPV-related help-seeking behavior across the life course be predicted by age or type of IPV?

GLMM was conducted to analyze trajectories and examine covariates of IPV-related help-seeking based on age and type of violence experienced. GLMM allows the

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researcher to analyze changes in the probability of seeking help and test whether changing probabilities are associated with age or type of violence (Grimm, Ram, & Estabrook, 2017; Yoshihama & Bybee, 2011). One model was run to examine help-seeking behavior with Level 1 time-varying covariates *age, physical violence (contemporaneous), physical violence (cumulative), sexual violence (contemporaneous), sexual violence (cumulative), psychological violence (contemporaneous), psychological violence (cumulative),* and *frequency* and Level 2 time invariant covariate *age at interview*. Contemporaneous violence indicates that a participant was experiencing that type of IPV in a given relationship year in the LHC. Cumulative violence was constructed by summing the number of previous years of that type IPV experienced by that given relationship year in the LHC. Due to lack of previous research on differences in help-seeking over the life course based on IPV type, no hypotheses were delineated. This model was analyzed using the glmer function in the lme4 package (Bates et al., 2014) in *R version 4.0.3* software (R Core Team, 2020).

CHAPTER 4

RESULTS

Generalized Linear Mixed Modeling

For the first three research questions, separate models were run to evaluate the

trajectories of IPV by type (physical, psychological, sexual) and frequency (high

frequency). For each LHC year from age 16 to the participant's age at time of interview,

the occurrence of any violence experienced was coded as a dichotomous outcome (*0 = no*

violence experienced; 1 = violence experienced) for each type of violence. Frequency

was coded as a dichotomous outcome (*0 = low frequency or no IPV events; 1 = high*

frequency IPV events), resulting in a binomial distribution for each outcome. For the final

research question, a model was run to evaluate the trajectory of seeking IPV-related help

(*0 = did not seek help; 1 = did seek help*) resulting in a binomial distribution of the

outcome. To evaluate non-normally distributed scores of repeated measures, a

generalized linear mixed model (GLMM) was used.

GLMM (also known as logistic hierarchical linear modeling or multilevel logistic

regression) is an extension of the generalized linear model which accommodates both

random and fixed effects (Grimm et al., 2017; Stroup, 2013). GLMM reflects the

dependencies among repeated observations nested within individuals, which is ideal for

analyzing repeated measures data. It can also accommodate participants with differing

numbers of observations (e.g., greater number of observations recorded for older women

compared to younger at time of interview), and allows the researcher to examine the

influence of both time-varying and time-invariant variables. GLMM enables prediction of

non-normal data. Therefore, each model run for the first three research questions

evaluated whether the probability of experiencing each type of violence or frequency of violence changed over the life course. For the final research question, the model run evaluated whether the probability of seeking IPV-related help changed over the life course.

This approach provides a way to test whether changing probabilities of experiencing IPV or seeking IPV-related help are associated with covariates that change over time (Level 1 covariates) and those that are constant over time but change across women (Level 2 covariates; Yoshihama & Bybee, 2011). The time indicator for each model was the participant's age in each year of the LHC. For each model, Level 1 covariates included *age* and *age squared*, accounting for the curvilinear relationship between age and IPV. Level 2 covariates included person-level time-invariant variables, which allowed for the examination of differences between individuals. *Age at interview* was included as a Level 2 variable to account for possible cohort effects as a main effect on the intercept as well as in interaction with the linear time slopes (e.g. *age at time of interview*age*).

Variable Centering

GLMM intercepts assume a zero point; therefore, centering is commonly completed. Centering in longitudinal analysis helps to make the model more interpretable and reduces collinearity among polynomial and interaction terms (Singer & Willet, 2003). Grand-mean centering or group-mean centering is often employed for linear models as the average score is often a meaningful estimate of an underlying population mean (Aiken & West, 1991). Of the three types of predictors that are possible in GLMM, a dedicated time variable is the only predictor that is necessary to make the model

longitudinal (Love, 2020). For growth curve models using age as the time variable, grand-mean or group-mean centering does not necessarily create a meaningful estimate (Biesanz et al., 2004). For example, in a study following differences in weight every two years from age five to age 13, age was centered at five because the researcher was interested in the children's initial weight at age 5 and its relationship with the rate of change in weight growth from age 5 to 13 (Biesanz et al., 2004). In this example, it was worthwhile to rescale the time variable so that the first measurement is the zero point, which allowed for the interpretation of the intercept as a baseline or initial status of the dependent variable (Love, 2020). In the current study, the researcher was interested in the initial experience of IPV and its relationship with the rate of change in IPV experiences. Therefore, for ease of interpretation of IPV experience over the life course *age* was centered at 17, which was the youngest age of reported IPV experience. In other words, 17 was subtracted from each age across the life course, which effectively set age 17 as the model intercept or zero point. For ease of interpretation, *age at interview* was grand-mean centered at 68, which was the mean age at which women were interviewed.

Model Fit

All GLMM models were evaluated using the glmer procedure in the lme4 package (Bates et al., 2014) in R version 1.4.11 (R Core team, 2020), using a logit link and unstructured covariance matrix (Finch et al., 2019). Models were fit by maximum likelihood (Laplace Approximation). To select an optimal model, the researcher used Akaike Information Criterion (AIC) and Bayesion Information Criterion (BIC), which are most commonly used for model selection (Kim et al., 2016). A lower AIC corrects for small sample size and a lower BIC score signifies a better fitting model in comparison to

other models. The final models presented for each research question were selected based on their fit indices.

Model Diagnostics

The following assumptions were satisfied for GLMM (Love, 2020): normal distribution of random effects, appropriate link function selection, appropriate estimation of the variance (overdispersion), and independence. The normal distribution of random effects was evaluated using Q-Q plots to examine residuals versus predicted plots to determine deviations from normality (see Appendix J). Link function selection was evaluated by comparing averages of outcomes to predicted variables and then plotting the averages against predicted values (see Appendix K). Appropriate estimation of the variance (overdispersion) was evaluated by dividing the model's generalized chi-square (comparing magnitude of the model residuals to the theoretical variance) by its degrees of freedom (see Appendix L). Finally, the assumption of independence was met by utilizing a multilevel model approach with *age* entered as a Level 1 covariate and *age at interview* entered as a Level 2 covariate. Model validation indicated no problems. Additionally, for all unconditional and final models the intraclass correlation (ICC) was calculated and reported. Power analyses were also completed for each final model (Appendix M). Full model GLMM equations can be found in Appendix N.

Univariate Analysis

Table 5 details the experiences of reported physical IPV, psychological IPV, and sexual IPV experienced in total person-years. A person-year is one calendar year in the LHC that corresponds with a given age (e.g. ages 16 through 68 result in a total of 53 collected person-years in the LHC for that individual). The experiences of high frequency

IPV and IPV-related help-seeking are also included in the table for a total of 2,738

person-years collected for the 52 respondents. Two time-invariant predictor variables

were used in the analyses at Level 2 (Table 6). The average age at time of interview was

68 (SD = 5.42) and the average score on the ACES questionnaire was 3.5 (SD = 2.17).

Table 5

IPV and Help-seeking Reported in Person-years

Measures	Person-years[a]	Percentage[b]
Physical IPV	291	10.6
Psychological IPV	648	23.7
Sexual IPV	254	9.3
High frequency IPV	424	15.5
IPV-related help seeking	144	5.3

Note: IPV, intimate partner violence. [a]n = 2,738 person-years, 52 respondents. [b]Number

of person-years/2,738

Table 6

Univariate Statistics of Level 2 Time-invariant Covariates

Variable	M(SD)	Range	Skewness	Kurtosis
Age at interview	67.7 (5.4)	60 to 82	0.9	0.5
ACES	3.5 (2.2)	0 to 8	0.1	-1.1

Note: Cronbach's Alpha for ACES = 0.5.

Results

Q₁: What are the characteristics of trajectories of IPV by type across the life course among older adult community-dwelling women in the Southwestern United States?

For each type of IPV, model building occurred in three stages: an intercept only model, a linear model, and a quadratic model. The effects of Level 1 covariates can be estimated at random or fixed. Random effects do not assume that covariates are the same for all women; rather, they are estimated for each individual and then averaged. Fixed effects are estimated as the same for all women. Because variability in individual participants' trajectories were expected, all Level 1 effects were estimated as random. Therefore, in each model, *age* (Level 1) was entered as a random effect and *age at time of interview* (Level 2) was entered as a fixed effect. To accommodate trajectories of abuse that were not strictly linear but perhaps accelerated or decelerated at various points, polynomial terms to capture trajectory curvilinearity were included (Yoshihama & Bybee, 2011). Therefore, in each quadratic model, *age* and *age squared* (Level 1) were entered as random effects. *Age at time of interview* and the interaction between *age and age at time of interview* were included as fixed effects in the quadratic model.

Model 1: Characteristics of Physical IPV Trajectories

Model 1 examined the trajectories of physical IPV across the life course (Table 7). Parameter and variance estimates for GLMM of physical IPV with AIC and BIC fit indices are summarized in Table 8. Parameters in Table 8 represent the log odds of experiencing physical IPV across the life course. Based on AIC and BIC fit indices, the quadratic model was selected as the final model. Though age at interview was not statistically significant, the variable remained in the model as a control variable.

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Table 7

Multilevel Diagram of Model 1

Sub-index	Level	Variables
I (2,738)	Time-varying (Level 1)	Age Age squared *Dependent variable:* Physical IPV experienced
J (52)	Time-invariant (Level 2)	Age at interview Age at interview*age

Table 8

Summarizing Parameter Estimates for Generalized Linear Mixed Models of Physical IPV

Parameter	Intercept only model		Linear model		Quadratic model	
	Parameter Estimate	95% CI	Parameter Estimate	95% CI	Parameter Estimate	95% CI
Fixed Effects						
Intercept	-3.51 (0.37)	-4.24 to -2.79	-2.22 (0.50)	-3.20 to -1.24	-7.97 (1.07)	-10.07 to -5.87
Age (Linear)			-0.05 (0.01)	-0.07 to -0.03	1.08 (0.15)	0.79 to 1.37
Age^2 (Curvilinear)					-0.06 (0.008)	-0.08 to -0.04
Age at interview			0.003 (0.07)	-0.14 to 0.14	-0.14 (0.22)	-0.57 to 0.29
Age at interview*age					-0.004 (0.03)	-0.06 to 0.06
	Variance Estimate	95% CI	Variance Estimate	95% CI	Variance Estimate	95% CI
Random Effects						
Intercept	4.63 (2.15)	4.55 to 4.71	10.09 (3.18)	10.38 to 10.62	19.74 (4.44)	19.57 to 19.91
Age (Linear)			0.005 (0.07)	0.002 to 0.007	0.44 (0.66)	0.42 to 0.46
Age^2 (Curvilinear)					0.001 (0.04)	0 to 0.002
	AIC	BIC	AIC	BIC	AIC	BIC
Fit Indices	1362.40	1374.30	1150.60	1186.10	743.30	808.40

Note: AIC = Akaike's Information Criterion; BIC = Bayes Information Criterion; estimates based on 2,738 relationship-years and 52 participants. ICC of Intercept only model = 0.99; ICC of Quadratic model = 0.99.

Results of the GLMM analysis for Model 1 are presented in Table 9. For ease of interpretation, parameter log odds for fixed effects were converted into odds ratios (OR) for the final model. The fixed (average) effects indicate the influence of each covariate to the estimated trajectory of physical IPV. The OR for the intercept indicates that for women interviewed at age 68, the probability of having experienced physical IPV at age 17 was 0.01. Across the life course, there was a significant positive linear effect of age (OR = 2.94) as well as a significant negative effect of age-squared (OR = 0.94), indicating the probability of physical IPV increased over the early portion of the life course and then declined. This complex effect can be seen in the graph of modeled effects in Figure 1. In general, the probability of physical IPV increased from age 16 (labeled as -1, due to centering at age 17) to the late 30s, then declined. Age at time of interview did not significantly affect the trajectory of physical IPV across the life course.

The random effects of the Level 1 variables indicate the extent to which trajectories of physical IPV across the life course varied among the 52 women. All three variance terms, the intercept, linear, and curvilinear effects of age, had standard deviations that were significantly different from zero. This indicates that women's individual trajectories varied despite similarities reflected in the significant fixed effects. Variance in women's physical IPV trajectories in this model remains to be explained by unmeasured factors.

Table 9

Final GLMM of Physical IPV Across the Life Course

	Fixed (average) effects				Random effects	
	Coefficient	*SE*	*z* value	Odds ratio	Variance	*SD*
Intercept	-7.97	1.07	-7.47***	0.01	19.74*	4.44
Time-varying covariates (Level 1)						
Age (linear effect)	1.08	0.15	7.12***	2.94	0.44*	0.66
Age-squared (curvilinear effect)	-0.06	0.01	-6.98***	0.94	0.01*	0.04
Time invariant covariates (Level 2)						
Age at interview	-0.14	0.21	-0.62	0.87	___	
Age at interview x Age (linear)	-0.004	0.03	-0.13	0.99	___	

Note: Level 2 *N* = 52 women, Level 1 *N* = 2738 person-years. *p < .05. **p < .01.

***p < .001.

Figure 1

Trajectories of Physical IPV Over the Life Course
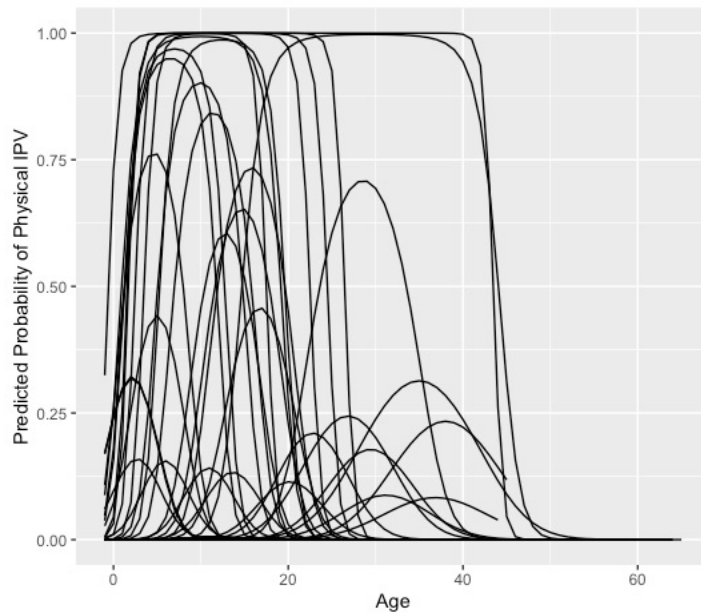
Model 2: Characteristics of Psychological IPV Trajectories

   Model 2 examined the trajectories of psychological IPV across the life course

(Table 10). Parameter and variance estimates for GLMM of psychological IPV with AIC

and BIC fit indices are summarized in Table 11. Parameters in Table 11 represent the log

odds of experiencing psychological IPV across the life course. Based on AIC and BIC fit

indices, the quadratic model was selected as the final model. Though age at interview was

not statistically significant, the variable remained in the model as a control variable.

Table 10

Multilevel Diagram of Model 2

Sub-index	Level	Variables
I (2,738)	Time-varying (Level 1)	Age Age squared *Dependent variable:* Psychological IPV experienced
J (52)	Time-invariant (Level 2)	Age at interview Age at interview*age

Table 11

Summarizing Parameter Estimates for Generalized Linear Mixed Models of Psychological IPV

Parameter	Intercept only model		Linear model		Quadratic model	
	Parameter Estimate	95% CI	Parameter Estimate	95% CI	Parameter Estimate	95% CI
Fixed Effects						
Intercept	-1.53 (0.20)	-1.92 to -1.14	-1.11 (0.36)	-1.82 to -0.40	-6.95 (1.28)	-9.46 to -4.44
Age (Linear)			-0.03 (0.01)	-0.05 to -0.01	0.77 (0.11)	0.55 to 0.99
Age^2 (Curvilinear)					-0.03 (0.01)	-0.05 to -0.01
Age at interview			-0.01 (0.04)	-0.09 to 0.07	-0.17 (0.25)	-0.66 to 0.32
Age at interview*age					0.01 (0.02)	-0.03 to 0.05
Random Effects	Variance Estimate	95% CI	Variance Estimate	95% CI	Variance Estimate	95% CI
Intercept	1.77 (1.33)	1.72 to 1.82	5.76 (2.40)	5.67 to 5.85	32.50 (5.70)	32.29 to 32.71
Age (Linear)			0.01 (0.09)	0.01 to 0.01	0.40 (0.63)	0.38 to 0.04
Age^2 (Curvilinear)					.001 (0.02)	0.003 to 0.001
	AIC	BIC	AIC	BIC	AIC	BIC
Fit Indices	2523.90	2535.70	2228.50	2264.00	1572.20	1637.30

Note: AIC = Akaike's Information Criterion; BIC = Bayes Information Criterion; Estimates based on 2,738 relationship-Years and 52 participants. ICC of Intercept-only model = 0.35; ICC of Quadratic model = 0.8

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Results of the GLMM analysis for Model 2 are presented in Table 12. For ease of interpretation, parameter log odds for fixed effects were converted into odds ratios (OR) for the final model. The fixed (average) effects indicate the influence of each covariate to the estimated trajectory of psychological IPV. The OR for the intercept indicates that for women interviewed at age 68, the probability of having experienced psychological IPV at age 17 was 0.001. Across the life course, there was a significant positive linear effect of age (OR = 2.16) as well as a significant negative effect of age-squared (OR = 0.97), indicating the probability of experiencing psychological IPV increased over the early portion of the life course and then declined. This complex effect can be seen in the graph of modeled effects in Figure 2. In general, the probability of experiencing psychological IPV increased from age 16 (labeled as -1, due to centering at age 17) to the mid 40s then declined. Age at time of interview did not significantly affect the trajectory of psychological IPV across the life course.

The random effects of the Level 1 variables indicate the extent to which trajectories of psychological IPV across the life course varied among the 52 women. All three variance terms, the intercept, linear, and curvilinear effects of age, had standard deviations that were significantly different from zero. This indicates that women's individual trajectories varied despite similarities reflected in the significant fixed effects. Variance in trajectories of women experiencing psychological IPV in this model remains to be explained by unmeasured factors.

Table 12

Final GLMM of Psychological IPV Across the Life Course

	Fixed (average) effects				Random effects	
	Coefficient	*SE*	*z* value	Odds ratio	Variance	*SD*
Intercept	-6.95	1.28	-5.4***	0.001	32.50*	5.70
Time-varying covariates (Level 1)						
Age (linear effect)	0.77	0.11	7.23***	2.16	0.40*	0.63
Age-squared (curvilinear effect)	-0.03	0.01	-6.60***	0.97	0.001*	0.02
Time invariant covariates (Level 2)						
Age at interview	-0.17	0.25	-0.68	0.84	___	
Age at interview x Age (linear)	0.01	0.02	0.18	1.01	___	

Note: Level 2 *N* = 52 women, Level 1 *N* = 2738 person-years. *$p < .05$. **$p < .01$.

***$p < .001$.

Figure 2

Trajectories of Psychological IPV Over the Life Course

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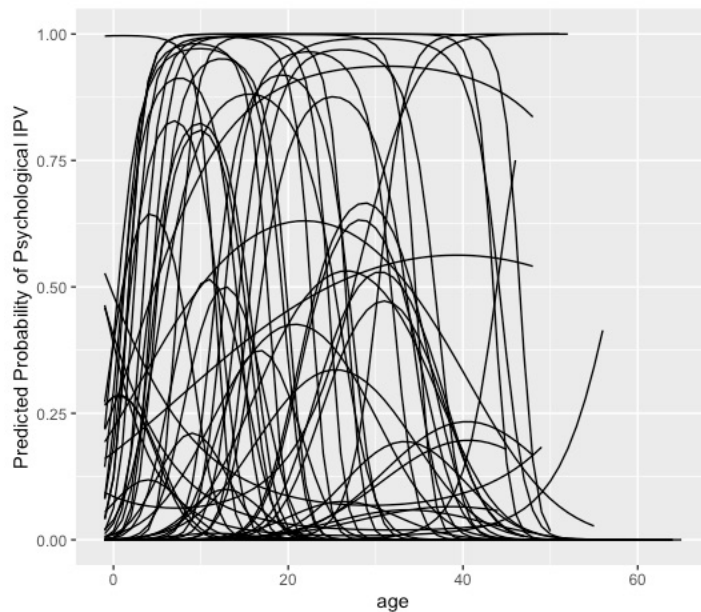
Model 3: Characteristics of Sexual IPV Trajectories

      Model 3 examined the trajectories of sexual IPV across the life course (Table 13).

Parameter and variance estimates for GLMM of sexual IPV with AIC and BIC fit indices

are presented in Table 14. Parameters in Table 14 represent the log odds of experiencing

sexual IPV across the life course. Based on AIC and BIC fit indices, the quadratic model

was selected as the final model.

Table 13

Multilevel Diagram of Model 3

Sub-index	Level	Variables
I (2,738)	Time-varying (Level 1)	Age Age squared *Dependent variable:* Sexual IPV experienced
J (52)	Time-invariant (Level 2)	Age at interview Age at interview*age

Table 14

Summarizing Parameter Estimates for Generalized Linear Mixed Models of Sexual IPV

Parameter	Intercept only model		Linear model		Quadratic model	
	Parameter Estimate	95% CI	Parameter Estimate	95% CI	Parameter Estimate	95% CI
Fixed Effects						
Intercept	-4.33 (0.54)	-5.39 to -3.27	-3.89 (0.83)	-5.52 to -2.26	-11.76 (1.40)	-14.50 to -9.02
Age (Linear)			-0.07 (0.03)	-0.13 to -0.01	1.67 (0.36)	0.96 to 2.38
Age^2 (Curvilinear)					-0.10 (0.02)	-0.14 to -0.06
Age at interview			-0.07 (0.10)	-0.27 to 0.13	-1.46 (0.27)	-1.99 to -0.93
Age at interview*age					0.13 (0.06)	0.01 to 0.25
Random Effects	Variance Estimate	95% CI	Variance Estimate	95% CI	Variance Estimate	95% CI
Intercept	7.28 (2.70)	7.18 to 7.38	13.92 (3.73)	13.78 to 14.06	2.04 (1.43)	1.99 to 2.09
Age (Linear)			0.01 (0.11)	0.01 to 0.01	3.41 (1.83)	3.34 to 3.48
Age^2 (Curvilinear)					0.01 (0.07)	0.01 to 0.01
	AIC	BIC	AIC	BIC	AIC	BIC
Fit Indices	1228.5	1240.3	1025.1	1060.6	588.5	653.6

Note: AIC = Akaike's Information Criterion; BIC = Bayes Information Criterion; estimates based on 2,738 relationship-years and 52 participants. ICC of Intercept only model = 0.67; ICC of Quadratic model = 0.99.

Results of the GLMM analysis for Model 3 are presented in Table 15. For ease of interpretation, parameter log odds for fixed effects were converted into odds ratios (OR) for the final model. The fixed (average) effects indicate the influence of each covariate to the estimated trajectory of sexual IPV. The OR for the intercept indicates that for women interviewed at age 68, the probability of having experienced sexual IPV at age 17 was negligible. Across the life course, there was a significant positive linear effect of age (OR = 5.31) as well as a significant negative effect of age-squared (OR = 0.99), indicating the probability of experiencing sexual IPV increased over the early portion of the life course and then declined. This complex effect can be seen in the graph of modeled effects in Figure 3. In general, the probability of experiencing sexual IPV increased from age 16 (labeled as -1, due to centering at age 17) to the mid 30s, then declined.

The effect of age on sexual IPV across the life course varied depending on the age of the woman when she was interviewed. The probability of experiencing IPV at age 17 (the intercept) was much less (OR = 0.23) for each additional year in age at the time of interview. The increasing probability of sexual IPV across the life course was slightly steeper for women who were older at the time of interview: 0.14% greater (OR = 1.14) for each year older at the time of the interview.

The random effects of the Level 1 variables indicate the extent to which trajectories of sexual IPV across the life course varied among the 52 women. All three variance terms, the intercept, linear, and curvilinear effects of age, had standard deviations that were significantly different from zero. This indicates that women's individual trajectories varied despite similarities reflected in the significant fixed effects.

Variance in trajectories of women experiencing psychological IPV in this model remains

to be explained by unmeasured factors.

Table 15

Final GLMM of Sexual IPV Across the Life Course

	Fixed (average) effects				Random effects	
	Coefficient	*SE*	*z* value	Odds ratio	Variance	*SD*
Intercept	-11.76	1.40	-8.39***	7.8e-6	2.04*	1.43
Time-varying covariates (Level 1)						
Age (linear effect)	1.67	0.36	4.64***	5.31	3.41*	1.83
Age-squared (curvilinear effect)	-0.10	0.02	-5.55***	0.91	0.01*	0.07
Time invariant covariates (Level 2)						
Age at interview	-1.46	0.27	-5.44***	0.23	___	
Age at interview x Age (linear)	0.13	0.06	2.15*	1.14	___	

Note: Level 2 *N* = 52 women, Level 1 *N* = 2738 person-years. *$p < .05$. **$p < .01$.

***$p < .001$.

Figure 3

Trajectories of Sexual IPV Over the Life Course
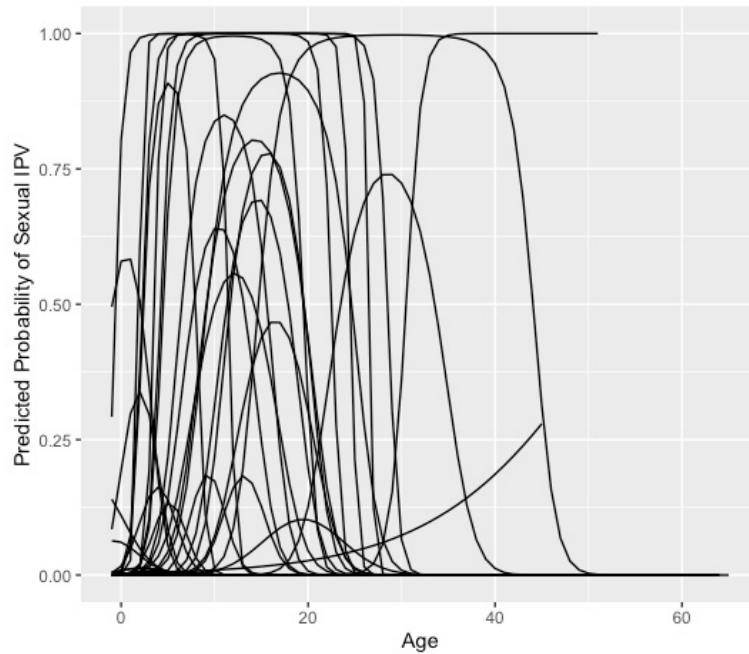
Q₂: What are the trajectories of high frequency IPV across the life course among older adult community-dwelling women in the Southwestern United States?

Model 4: High Frequency IPV

Model 4 examined the trajectories of high frequency IPV across the life course (Table 16). For each LHC year from age 16 to the participant's age at time of interview, IPV frequency for any IPV experienced was coded as a dichotomous outcome (0 = low frequency /no IPV experienced; 1 = high frequency) resulting in a binomial distribution for each outcome. Model building occurred in three stages: an intercept only model, a linear model, and a quadratic model. Because variability in individual participants' trajectories were expected, all Level 1 effects were estimated as random. Therefore, in each linear model, *age* (Level 1) was entered as a random effect and *age at time of*

interview (Level 2) was entered as a fixed effect. To accommodate trajectories of abuse that were not strictly linear but perhaps accelerated or decelerated at various points, polynomial terms to capture trajectory curvilinearity were included (Yoshihama & Bybee, 2011). Therefore, in each quadratic model, *age* and *age squared* (Level 1) were entered as random effects. *Age at time of interview* and the interaction between *age and age at time of interview* were included as fixed effects in the quadratic model.

Table 16

Multilevel Diagram of Model 4

Sub-index	Level	Variables
I (2,738)	Time-varying (Level 1)	Age Age squared *Dependent variable:* High frequency IPV experienced
J (52)	Time-invariant (Level 2)	Age at interview Age at interview*age

Table 17 summarizes parameter and variance estimates for GLMM of high s frequency IPV with AIC and BIC fit indices. Parameters in Table 17 represent the log odds of experiencing high frequency IPV across the life course. Based on AIC and BIC fit indices, the quadratic model was selected as the final model. Though age at interview was not statistically significant, the variable remained in the model as a control variable.

Table 17

Summarizing Parameter Estimates for Generalized Linear Mixed Models of High Frequency IPV

Parameter	Intercept only model		Linear model		Quadratic model	
	Parameter Estimate	95% CI	Parameter Estimate	95% CI	Parameter Estimate	95% CI
Fixed Effects						
Intercept	-2.22 (0.21)	-2.63 to -1.81	-2.08 (0.43)	-2.92 to -1.65	-8.33 (1.22)	-10.72 to -5.94
Age (Linear)			-0.01 (0.01)	-0.03 to 0.01	0.76 (0.01)	0.74 to 0.78
Age^2 (Curvilinear)				-0.07 to 0.09	-0.02 (0.004)	-0.03 to -0.01
Age at interview			0.01 (0.04)		0.32 (0.24)	-0.15 to 0.79
Age at interview*age					-0.03 (0.02)	-0.07 to 0.01
Random Effects	Variance Estimate	95% CI	Variance Estimate	95% CI	Variance Estimate	95% CI
Intercept	1.88 (1.37)	1.83 to 1.93	7.92 (2.81)	7.81 to 8.03	20.72 (4.55)	20.55 to 20.89
Age (Linear)			0.01 (0.01)	0.01 to 0.01	0.18 (0.42)	0.16 to 0.20
Age^2 (Curvilinear)					.0004 (0.02)	-0.003 to 0.001
	AIC	BIC	AIC	BIC	AIC	BIC
Fit Indices	2041.80	2053.60	1761.90	1797.40	1324.00	1389.00

Note: AIC = Akaike's Information Criterion; BIC = Bayes Information Criterion; estimates based on 2,738 relationship-years and 52 participants. ICC of Intercept-only model = 0.36; ICC of Quadratic model = 0.89.

Results of the GLMM analysis for Model 4 are presented in Table 18. For ease of interpretation, parameter log odds for fixed effects were converted into odds ratios (OR) for the final model. The fixed (average) effects indicate the influence of each covariate to the estimated trajectory of high frequency IPV. The OR for the intercept indicates that for women interviewed at age 68, the probability of having experienced high frequency IPV at age 17 was 0.002. Across the life course, there was a significant positive linear effect of age (OR = 2.14) as well as a significant negative effect of age-squared (OR = 0.98), indicating the probability of experiencing high frequency IPV increased over the early portion of the life course and then declined. This complex effect can be seen in the graph of modeled effects in Figure 5. In general, the probability of experiencing high frequency IPV increased from age 16 (labeled as -1, due to centering at age 17) to the mid to late 30s, then declined. Age at time of interview did not significantly affect the trajectory of high frequency IPV across the life course.

The random effects of the Level 1 variables indicate the extent to which trajectories of psychological IPV across the life course varied among the 52 women. Two variance terms, the intercept and linear effect of age, had standard deviations that were significantly different from zero. This indicates that women's individual trajectories varied despite similarities reflected in the significant fixed effects. Variance in trajectories of women experiencing high frequency IPV in this model remains to be explained by unmeasured factors.

Table 18

*GLMM of High Frequency IPV Across the Life Course*

	Fixed (average) effects				Random effects	
	Coefficient	*SE*	*z* value	Odds ratio	Variance	*SD*
Intercept	-8.33	1.22	-6.83***	0.002	20.72*	4.55
Time-varying covariates (Level 1)						
Age (linear effect)	0.76	0.01	9.63***	2.14	1.80*	0.42
Age-squared (curvilinear effect)	-0.02	0.004	-7.11***	0.98	0.001	0.02
Time invariant covariates (Level 2)						
Age at interview	0.32	0.24	1.35	1.38	___	
Age at interview x Age (linear)	-0.02	0.02	-1.55	0.98	___	

Note: Level 2 *N* = 52 women, Level 1 *N* = 2738 person-years. *$p < .05$. **$p < .01$.

***$p < .001$.

Figure 4

Trajectories of High Frequency IPV Over the Life Course
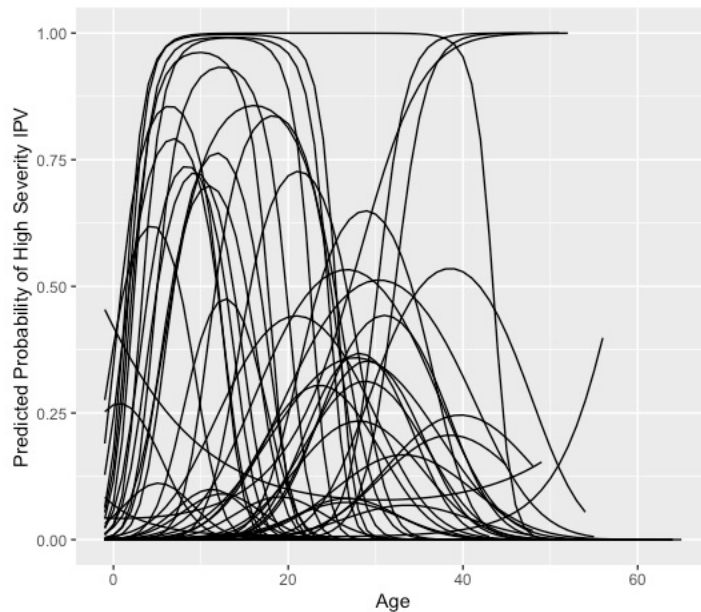
Q₃: Can IPV trajectories of IPV across the life course be predicted by ACE scores?

Three separate models were run to evaluate the impact of Adverse Childhood Experiences on trajectories of IPV by type: physical, psychological, and sexual. ACES was added as a Level 2 time-invariant continuous predictor variable.

Model 5: Physical IPV and ACES

Model 5 examined whether adverse experiences in childhood affected the trajectories of the probability of experiencing physical violence over the life course in adulthood (Table 19). ACES were added as a Level 2 time-invariant variable to the estimated model (Model 1) of Physical IPV over the life course. As shown in Table 20, participants' ACES score did not significantly affect the trajectory of Physical IPV over

the life course for this sample of women. According to the fit indices (AIC = 728.1; BIC = 793.2), Model 1 was not improved with the addition of the ACES variable.

Table 19

Multilevel Diagram of Model 5

Sub-index	Level	Variables
I (2,738)	Time-varying (Level 1)	Age Age squared *Dependent variable:* Physical IPV experienced
J (52)	Time-invariant (Level 2)	Age at interview Age at interview*age ACES

Table 20

GLMM of Physical IPV Across the Life Course with ACE scores

	Fixed (average) effects				Random effects	
	Coefficient	*SE*	*z* value	Odds ratio	Variance	*SD*
Intercept	-11.85	2.91	-4.06***	7.1e-6	28.58*	5.35
Time-varying covariates (Level 1)						
Age (linear effect)	1.46	0.19	7.84***	4.31	0.50*	0.71
Age-squared (curvilinear effect)	-0.06	0.01	-0.02***	0.94	0.001*	0.04
Time invariant covariates (Level 2)						
Age at interview	0.06	0.42	0.13	1.06	___	
ACES score	-0.001	0.58	-0.02	0.99	___	

Note: Level 2 $N = 52$ women, Level 1 $N = 2738$ person-years. AIC = 728.1; BIC = 793.2; ICC = 0.99. *$p < .05$. **$p < .01$. ***$p < .001$.

Model 6: Psychological IPV and ACES

Model 6 examined whether adverse experiences in childhood affected the trajectories of the probability of experiencing psychological IPV over the life course in adulthood (Table 21). ACES were added as a Level 2 time-invariant variable to the estimated model (Model 2) of psychological IPV over the life course. As shown in Table 22, participants' ACES score did not significantly affect the trajectory of psychological IPV over the life course for this sample of women. According to the fit indices (AIC = 1574; BIC = 1645), Model 2 was not improved with the addition of the ACES variable.

Table 21

Multilevel Diagram of Model 6

Sub-index	Level	Variables
I (2,738)	Time-varying (Level 1)	Age Age squared *Dependent variable:* Psychological IPV experienced
J (52)	Time-invariant (Level 2)	Age at interview Age at interview*age ACES

Table 22

GLMM of Psychological IPV Across the Life Course, with ACES

	Fixed (average) effects				Random effects	
	Coefficient	*SE*	*z* value	Odds ratio	Variance	*SD*
Intercept	-7.42	10.72	-4.32***	0.001	34.85*	5.90
Time-varying covariates (Level 1)						
Age (linear effect)	0.77	0.11	7.16***	2.16	0.41*	0.64
Age-squared (curvilinear effect)	-0.03	0.01	-6.60***	0.97	.001*	0.02
Time invariant covariates (Level 2)						
Age at interview	-0.17	0.23	-0.67	0.84	___	
ACES score	0.12	0.31	0.37	1.13		

Note: Level 2 *N* = 52 women, Level 1 *N* = 2738 person-years. AIC = 1574;

BIC = 1645; ICC = 0.87. *p < .05. **p < .01. ***p < .001.

Model 7: Sexual IPV and ACES

Model 7 examined whether adverse experiences in childhood affected the trajectories of the probability of experiencing sexual IPV over the life course in adulthood (Table 23). ACES were added as a Level 2 time-invariant variable to the estimated model (Model 3) of sexual IPV over the life course. As shown in Table 24, participants' ACES score did not significantly affect the trajectory of sexual IPV over the life course for this sample of women. However, according to the fit indices (AIC = 550.2; BIC = 621.2), Model 3 was slightly improved with the addition of the ACES variable.

Table 23

Multilevel Diagram of Model 7

Sub-index	Level	Variables
I (2,738)	Time-varying (Level 1)	Age Age squared *Dependent variable:* Sexual IPV experienced
J (52)	Time-invariant (Level 2)	Age at interview Age at interview*age ACES

Table 24

GLMM of Sexual IPV Across the Life Course with ACES

	Fixed (average) effects				Random effects	
	Coefficient	*SE*	*z* value	Odds ratio	Variance	*SD*
Intercept	-11.64	2.30	-5.07***	8.8e-6	0.20*	0.44
Time-varying covariates (Level 1)						
Age (linear effect)	1.75	0.29	6.10***	5.75	1.54*	1.24
Age-squared (curvilinear effect)	-0.09	0.01	-6.75***	0.91	0.01*	0.05
Time invariant covariates (Level 2)						
Age at interview	-1.45	0.36	-4.03***	0.23	___	
ACES score	-0.31	0.50	-0.63	0.73	___	

Note: Level 2 $N = 52$ women, Level 1 $N = 2738$ person-years. AIC = 550.2; BIC = 621.2; ICC = 0.99. *$p < .05$. **$p < .01$. ***$p < .001$.

Model 8: High Frequency IPV and ACES

Model 8 examined whether adverse experiences in childhood affected the trajectories of the probability of experiencing high frequency IPV over the life course in adulthood (Table 25). ACES were added as a Level 2 time-invariant variable to the estimated model (Model 4) of high frequency IPV over the life course. As shown in Table 26, participants' ACES score did not significantly affect the trajectory of high frequency IPV over the life course for this sample of women. According to the fit indices (AIC = 1324.9; BIC = 1395.9), Model 4 was not improved with the addition of the ACES variable.

Table 25

Multilevel Diagram of Model 8

Sub-index	Level	Variables
I (2,738)	Time-varying (Level 1)	Age Age squared *Dependent variable:* High frequency IPV experienced
J (52)	Time-invariant (Level 2)	Age at interview Age at interview*age ACES

Table 26

GLMM of IPV Frequency Across the Life Course with ACES

	Fixed (average) effects				Random effects	
	Coefficient	*SE*	*z* value	Odds ratio	Variance	*SD*
Intercept	-8.77	1.62	-5.42***	0.001	23.55*	4.85
Time-varying covariates (Level 1)						
Age (linear effect)	0.75	0.09	8.73***	2.12	0.17*	0.41
Age-squared (curvilinear effect)	-0.02	0.01	-7.16***	0.98	0.0003	0.02
Time invariant covariates (Level 2)						
Age at interview	0.32	0.24	1.39	1.38	___	
ACES score	0.12	0.30	0.41	1.13	___	

Note: Level 2 $N = 52$ women, Level 1 $N = 2738$ person-years. AIC = 1324.9;

BIC = 1395.9; ICC = 0.89. *$p < .05$. **$p < .01$. ***$p < .001$.

Q[4]: Are the trajectories of IPV-related help-seeking behavior associated with age or type of violence across the life course?

Model 9: IPV-Related Help-Seeking

To examine trajectories of help-seeking behavior, model building occurred in three stages: an intercept only model, a linear model, and a quadratic model. Because variability in individual participants' help-seeking trajectories were expected based on age, the following Level 1 effects were estimated as random: *age* and *age-squared*. The variable *age-squared* was entered as a random effect in the final quadratic model to accommodate trajectories of help-seeking by age that were not strictly linear but perhaps accelerated or decelerated over the life course (Yoshihama & Bybee, 2011). The following fixed effects were entered as Level 1 time-varying covariates to assess whether type of violence influenced help-seeking behavior over the life course: *Physical IPV (contemporaneous), Physical IPV (cumulative), Psychological IPV (contemporaneous); Psychological (cumulative); Sexual IPV (contemporaneous); Sexual IPV (cumulative) and High Frequency IPV (contemporaneous)*.

Contemporaneous indicates that a participant was currently experiencing that type of IPV at the given age in the LHC (e.g. "yes physical IPV experienced" entered as "1" at age 20; or "no physical IPV experienced" entered as "0" at age 50). Cumulative IPV was constructed to account for the number of previous years of IPV type experienced. For instance, for *Physical IPV (cumulative)* the value of this time-varying variable in year t is calculated as physical IPV experienced in each year, summed over all years, from year of first relationship to year $t - 1$. That is, a participant may have a contemporaneous physical IPV indicator of "0" for not currently experiencing IPV at age 45 and also may

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have a cumulative physical IPV score of 20, representing a cumulative history of 20 years

of physical IPV experience. *Age at interview* and the interaction between *Age at interview*

and *age* were included as Level 2 fixed effects (Table 27).

Table 27

Multilevel Diagram of Model 9

Sub-index	Level	Variables

I (2,738)	Time-varying (Level 1)	Age
		Age squared
		Physical IPV
		    (contemporaneous)
		Physical IPV (cumulative)
		Psychological IPV
		    (contemporaneous)
		Psychological IPV
		    (cumulative)
		Sexual IPV
		    (contemporaneous)
		Sexual IPV (cumulative)
		High frequency IPV
		    (contemporaneous)
		
		Dependent variable:
		Seeking IPV-related help

J (52)	Time-invariant (Level 2)	Age at interview Age at interview*age

Table 28 summarizes parameter and variance estimates for GLMM of help

seeking with AIC and BIC fit indices. Parameters in Table 28 represent the log odds of

seeking help across the life course. Based on AIC and BIC fit indices, the quadratic

model was selected as the final model. Though age at interview was not statistically

significant, the variable remained in the model as a control variable. Estimates were

based on 2,738 relationship-years and 52 participants.

Table 28

Parameter Estimates for GLMM Models of IPV-Related Help Seeking

Parameter	Intercept only model		Linear model	
	Parameter Estimate	95% CI	Parameter Estimate	95% CI
Fixed Effects				
Intercept	-3.36 (0.20)	-3.75 to -2.97	-7.29 (0.76)	-8.78 to -5.80
Age (Linear)			-0.03 (0.03)	-0.09 to 0.03
Age^2 (Curvilinear)				
Age at interview			-0.02 (0.07)	-0.16 to 0.12
Age at interview*age				
Physical IPV (contemporaneous)			2.18 (0.59)	1.02 to 3.34
Physical IPV (cumulative)			-0.11 (0.05)	-0.21 to -0.01
Psychological IPV (contemporaneous)			5.02 (0.52)	4.00 to 6.04
Psychological IPV (cumulative)			0.12 (0.06)	0.00 to 0.24
Sexual IPV (contemporaneous)			-2.37 (0.63)	-3.60 to -1.14
Sexual IPV (cumulative)			0.19 (0.06)	0.07 to 0.31
High Frequency IPV (contemporaneous)			0.36 (0.18)	-0.91 to 1.63
Random Effects	Variance Estimate	95% CI	Variance Estimate	95% CI
Intercept	1.11 (1.05)	1.07 to 1.15	6.56 (2.56)	6.46 to 6.66
Age (Linear)			0.01 (0.08)	0.01 to 0.01
Age^2 (Curvilinear)				-0.04 to 0.04
	AIC	BIC	AIC	BIC
Fit Indices	1041.00	1052.80	667.10	738.00

Parameter	Quadratic model	
	Parameter Estimate	95% CI
Fixed Effects		
Intercept	-7.46 (0.74)	-8.91 to -6.01
Age (Linear)	0.12 (0.05)	0.02 to 0.22
Age^2 (Curvilinear)	-0.003 (0.001)	-0.01 to -0.001
Age at interview	0.08 (0.11)	-0.14 to 0.3
Age at interview*age	-0.004 (0.004)	-.004 to 0.01
Physical IPV (contemporaneous)	2.02 (0.52)	1.00 to 3.02
Physical IPV (cumulative)	-0.11 (0.05)	-0.12 to -0.10
Psychological IPV (contemporaneous)	4.43 (0.48)	3.49 to 5.37
Psychological IPV (cumulative)	0.09 (0.04)	0.01 to 0.17
Sexual IPV (contemporaneous)	-2.08 (0.56)	-3.18 to -0.98
Sexual IPV (cumulative)	0.13 (0.04)	0.05 to 0.21
High Frequency IPV (contemporaneous)	-0.18 (0.11)	-0.40 to 0.04
Random Effects	Variance Estimate	95% CI
Intercept	1.23 (1.11)	1.19 to 1.27
Age (Linear)	8.1e-5 (0.01)	-0.002 to 0.004
Age^2 (Curvilinear)	2.6e^-6 (.002)	-0.04 to 0.04
	AIC	BIC
Fit Indices	667.50	773.90

Note: Estimates based on 2,738 relationship-years and 52 participants; AIC = Akaike's Information Criterion; BIC = Bayes Information Criterion; ICC of Intercept-only model = 0.25; ICC of Quadratic model = 0.59

Results of the GLMM analysis for Model 9 are presented in Table 29. For ease of interpretation, parameter log odds for fixed effects were converted into odds ratios (OR) for the final model. The fixed (average) effects indicate the influence of each covariate to the estimated trajectory of help seeking. The OR for the intercept indicates that for women interviewed at age 68, the probability of having sought help for IPV at age 17 was .001. Across the life course, there was a significant positive linear effect of age (OR = 1.12) as well as a significant negative effect of age-squared (OR = 0.99), indicating the probability of seeking help for IPV increased over the early portion of the life course and then declined. This complex effect can be seen in the graph of modeled effects in Figure 5. In general, the probability of seeking help for IPV increased from age 16 (labeled as -1, due to centering at age 17) to the mid 30s, then declined.

The occurrence of IPV of all types significantly affected help-seeking behavior. Across the life course, there was a significant positive linear effect of contemporaneous physical IPV (OR = 2.02) on seeking help, but a significant negative linear effect of cumulative physical IPV (OR = 0.99). That is, in a given year participants were more likely to seek help if they were currently experiencing physical IPV, but were less likely to seek help if they experienced physical IPV in the past and/or for more than one year. There was a significant positive linear effect of contemporaneous psychological IPV (OR = 83.93) and cumulative psychological IPV (OR = 2.36) on seeking help. That is, participants were likely to seek help for psychological IPV whether they were experiencing it in a given year and/or if they had been experiencing psychological IPV for more than a year. There was a significant negative linear effect of contemporaneous sexual IPV (OR = 0.12) on help-seeking, but a significant positive linear effect of

cumulative sexual IPV (OR = 1.14). That is, in a given year participants were less likely to seek help for sexual IPV if they were currently experiencing sexual IPV, but were more likely to seek help if they experienced sexual IPV in the past and/or for more than one year. Experiencing high frequency IPV did not have a significant impact on IPV-related help seeking.

Table 29
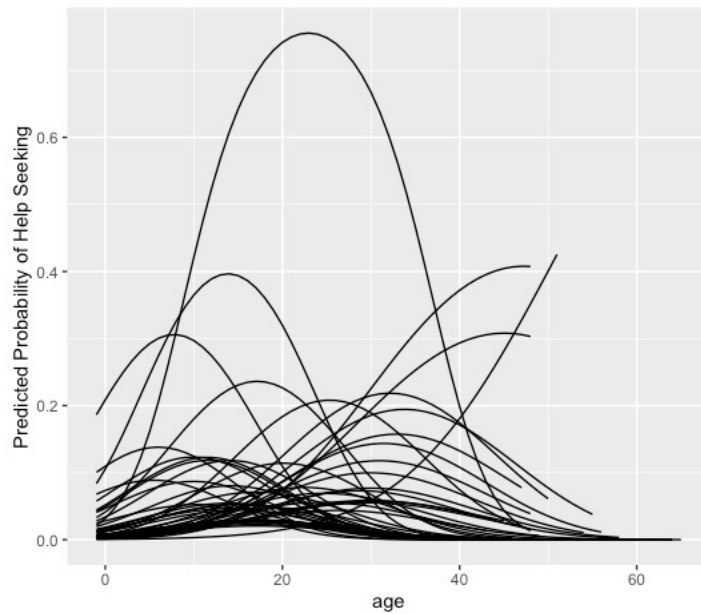
GLMM of Seeking Help Across the Life Course

	Fixed (average) effects				Random effects	
	Co-efficient	*SE*	*z* value	Odds ratio	Variance	*SD*
Intercept	-7.46	.074	-10.02**	0.001	1.23*	1.11
Time-varying covariates (Level 1)						
Age (linear effect)	0.11	0.05	2.07*	1.12	8.1e-5	0.01
Age (curvilinear)	-0.003	0.001	-2.47*	0.99	2.6e-6	0.002
Physical IPV (contemporaneous)	2.02	0.52	3.92***	7.54	___	
Physical IPV (cumulative)	-0.011	0.05	-2.45*	0.99	___	
Psychological IPV (contemporaneous)	4.43	0.48	9.15***	83.93	___	
Psychological IPV (cumulative)	0.09	0.04	2.36*	1.09	___	
Sexual IPV (contemporaneous)	-2.08	0.56	-3.73***	0.12	___	
Sexual IPV (cumulative)	0.13	0.04	2.89**	1.14	___	
High Frequency IPV (contemporaneous)	-0.18	0.11	-0.53	0.84	___	
Time invariant covariates (Level 2)						
Age at interview	0.08	0.11	0.78	1.08	___	
Age at interview*age	-0.004	0.004	-0.53	0.99	___	

Note: Level 2 *N* = 52 women, Level 1 *N* = 2738 person-years. *$p < .05$. **$p < .01$.
***$p < .001$.

Figure 5

Trajectories of IPV-Related Help-Seeking Over the Life Course

The random effects of the Level 1 *age* and *age squared* variables indicate the extent to which trajectories of IPV-specific help seeking across the life course varied among the 52 women. Only the intercept had a standard deviation that was significantly different from zero. Age and the linear effect of age did not have standard deviations that were significantly different from zero. This indicates that women's individual trajectories for seeking help for IPV did not significantly vary among the 52 women.

CHAPTER 5

DISCUSSION

IPV is a significant public health concern with lasting economic costs as well as physical and psychological health consequences. However, current research, intervention programs, and policies tend to target women of child-bearing age, leaving older adult women feeling unseen and unheard. Methodological challenges have hindered the calculation of valid estimates of IPV among older adult women (Rubin & Wenzel, 1996; Yoshihama & Gillespie, 2002). The use of the LHC for this study addressed these methodological challenges by maximizing memory retrieval. Through a Life Course Theory lens, this study contributes distinctively to the literature base by advancing the understanding of trajectories of IPV and IPV-related help-seeking behaviors over the life course among a sample of older adult women (aged 60 and older).

Summary of Findings and Conclusions

Sample Characteristics

IPV Experiences Across the Life Course

Contemporary research on IPV suggests IPV experiences typically first occur in late adolescence, peak in early adulthood, and decline during the latter half of the twenties (Johnson et al., 2015; O'Leary & Schumacher, 1999; Shortt et al., 2012). In contrast, the women in this sample reported their first IPV experience on average later in young adulthood (age 29). Over their lifetime, women reported experiencing, on average, 12 cumulative years of IPV events, with some women experiencing IPV events over the majority of their adult lifetime (up to 45 cumulative years of IPV). Over half of the women in this sample reported experiencing at least one type of IPV at age 45 or older.

Furthermore, of the women that experienced IPV at age 45 or later, nearly one-third reported these events as their first experience of IPV in their life time. Of the women in an intimate relationship at the time of interview, approximately one-quarter reported currently experiencing IPV-related behaviors from their intimate partner. These findings provide additional evidence that is needed to support the recommendation that women aged 45 or older should be screened for IPV (Crockett et al., 2015). As suggested by previous life course research (Rosay & Mulford, 2017; Yoshihama & Bybee, 2011), the utilization of behaviorally specific indicators of IPV with this sample may have captured experiences of abuse that are left unaccounted for in other research studies of later adulthood IPV.

IPV-related Help-seeking Across the Life Course

Over three quarters of the women in the sample reported seeking IPV-related help at least once in their lifetime. For both younger women and women over the age of 45, peer support was the most sought-after informal support. Family support was the second most sought-after IPV-related informal help. Though not as common, contacting a minister, priest, clergy, or other spiritual advisor was also reported as a source of informal support for IPV events. These findings point to the importance of IPV-related peer support groups for women experiencing IPV. Though these findings do not appraise effectiveness of this type of informal help-seeking, prior research has suggested peer-based advocacy inclusive of older adult peers have led to positive impacts on women's feelings of empowerment and resilience (Bandl et al., 2003; Tetterton & Farnsworth, 2011). Programs can better serve older adult women by prioritizing the development of these peer support systems for older age groups.

For both younger women and women over the age of 45, contacting a counselor, psychologist, or social worker was the most common response for formal IPV-related help-seeking. Of note, these findings indicate entry points for formal assistance; however, they do not indicate effectiveness of services provided. Still, these findings point to the importance of IPV-related training for practitioners in counseling fields, including clinical social workers. Professionals providing counseling services to older adults often neglect to address gender-based dynamics of power (Crockett et al., 2015). Police were reported as the second most-commonly contacted formal referral for both younger and older women. This finding is similar to previous research that suggests older women are just as likely as younger women to obtain IPV-related help via a police referral, underscoring the importance of age-specific IPV training for police officers (Lundy & Grossman, 2009).

Talking to a doctor or nurse about the incident was reported as the third most common form of IPV-related formal help-seeking for younger women, but not older women. It is possible that older women in this sample may not have received IPV-related help from a doctor or nurse due to the lack of training for signs of IPV among older adults in the medical field though additional research is necessary to examine this inference (Anetzberger 2001; Lachs & Pillemer, 2004; Wyandt, 2004). Given that increased age generally leads to increased visits to primary care doctors and other medical visits (e.g., Cornwell et al., 2008), it is vital that doctors, nurses, and medical social workers recognize signs of IPV among older adults, rather than assuming medical symptoms, such as confusion or bruising, are simply signs of the natural aging process. Additionally, previous research suggests that medical professionals are more likely to

refer signs of abuse of their older patients to APS, an organization that does not typically refer individuals to IPV programs (McGarry & Simpson, 2011; Straka & Montminy, 2006; UN DESA, 2013).

Trajectories of IPV by Type Over the Life Course

The first research question explored the characteristics of trajectories of IPV by type (physical, psychological, sexual) across the life course. No hypotheses were delineated across the types of IPV. Three separate GLMM models were developed based on type of IPV experienced.

Model 1: Characteristics of Physical IPV Trajectories

The model results indicated that the probability of experiencing physical IPV was higher during the early portion of the life course and then declined. That is, it is more likely a woman will experience physical IPV prior to the age of 40. However, there was significant variability between women's individual trajectories. This finding is similar to trajectories reported in previous studies that indicate IPV peaks earlier in life (Johnson et al., 2015; O'Leary, 1999; Shortt et al., 2012); however, the age at which physical IPV experiences begin to decline is much later in this sample. In this sample, overall decline in physical IPV began in the mid-to-late thirties, whereas previous studies have suggested that this decline starts in the mid-to-late twenties for samples of younger aged women. The later-aged IPV peak is similar to studies utilizing a life history calendar approach to assess IPV over the life course (Kamimura et al., 2013; Yoshihama & Bybee, 2011). The use of behaviorally specific indicators of physical abuse (e.g. asking "were you slapped, kicked, or shoved") rather than broadly asking if the participant had been physically

abused may account for the increased number of reports of IPV in later ages (Yoshihama & Bybee, 2011).

Model 2: Characteristics of Psychological IPV Trajectories

The model results indicated that the probability of experiencing psychological IPV was higher during the early portion of the life course and then declined. Compared to physical IPV, the psychological IPV trajectories appear to increase through the mid-40 ages prior to declining. Similar to the physical IPV trajectories, there was significant variability between women's individual trajectories. This finding is similar to trajectories reported in previous studies that indicate IPV peaks earlier in life (Johnson et al., 2015; O'Leary, 1999; Shortt et al., 2012); however, the age at which psychological IPV experiences begin to decline is much later in this sample. In this sample, overall decline in psychological IPV began in the mid-to-late thirties, whereas previous studies have suggested that this decline starts in the mid-to-late twenties for samples of younger aged women. The later-aged psychological IPV-peak is similar to studies utilizing a life history calendar approach to assess IPV over the life course (Kamimura et al., 2013; Yoshihama et al., 2006; Yoshihama & Bybee, 2011). Additionally, this supports literature that suggests psychological violence, particularly coercive control, may increase later in life compared to physical violence (e.g., Daly et al., 2008; Fisher & Regan, 2006; Roberto & McCann, 2018).

Model 3: Characteristics of Sexual IPV Trajectories

The model results indicated that the probability of experiencing sexual IPV was higher during the early portion of the life course and then declined. Similar to physical IPV, the sexual IPV trajectories appear to increase through the mid-30 ages prior to

declining. Like physical and psychological IPV trajectories, there was significant variability between women's individual trajectories of sexual IPV. This finding is similar to trajectories reported in previous studies that indicate IPV peaks earlier in life (Johnson et al., 2015; O'Leary, 1999; Shortt et al., 2012); however, like the first two models, the age at which sexual IPV experiences begin to decline is much later in this sample. The later-aged sexual IPV-peak is similar to studies utilizing a life history calendar approach to assess IPV over the life course (Kamimura et al., 2013; Yoshihama et al., 2006; Yoshihama & Bybee, 2011).

Unlike the first two models, the effect of age on sexual IPV across the life course varied depending on the age of the woman when she was interviewed. The increasing probability of sexual IPV across the life course was slightly steeper for women who were older at the time of interview. That is, older women at time of interview were more likely to report experiencing sexual IPV in their early adulthood compared to younger women at time of interview, suggesting cohort effects on experiencing sexual IPV earlier in life in this sample. This supports literature suggesting more recent birth cohorts in the U.S. have a lower risk of IPV compared to women born before the 1960s (Rivara et al., 2009). External historical changes have occurred related to the recognition of sexual IPV that may account for this finding, notably the changes in marital rape laws throughout the U.S. beginning in the mid-1970s through the early 1990s when all 50 states criminalized marital rape (Jackson, 2015).

In all three models, the trajectories of IPV experiences displayed curvilinear characteristics over the life course, with the probability of IPV events increasing earlier in life then decreasing later in life. Though the curvilinear trajectories of abuse over the life

course are similar to previous studies (Kamimura et al., 2013; Yoshihama et al., 2006; Yoshihama & Bybee, 2011) the findings from this study suggest that IPV may continue to increase later into adulthood than previously suggested. This study only examined trajectories of violence for women aged 60 and older, whereas other studies utilizing an LHC approach focused on a sample of younger women (e.g. women in their 20s and 30s). This may account for the finding that all three types of IPV increase later into adulthood than previously reported. Additionally, the findings from this study support the use of behaviorally based indicators of abuse and using an LHC with older women to capture IPV trajectories over the life course.

Trajectories of High Frequency IPV Over the Life Course

To account for IPV frequency, the second research question explored the characteristics of trajectories of high frequency IPV across the life course. That is, IPV that was reported as happening daily or weekly compared to IPV that was reported as yearly. No hypothesis was delineated for this exploratory question. One GLMM model was developed to examine high frequency IPV over the life course.

Model 4: Characteristics of High Frequency IPV Trajectories

The model results indicated that the probability of experiencing high frequency IPV was higher during the early portion of the life course and then declined. That is, it is more likely a woman will experience high frequency IPV prior to the age of 40. However, there was significant variability between women's individual trajectories. This finding supports studies that found frequency of IPV to decline later in life (e.g., Rennison & Rand, 2003); however, several studies posited that non-physical IPV (e.g. controlling behaviors and emotional abuse) may increase in frequency as women and

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their partners age (e.g., Daly et al., 2008; Fisher & Regan, 2006; Zink et al., 2006). Older women may not view coercive control (a type of psychological IPV) as abusive if they have previously experienced physical violence during their younger years, which may account for reported high frequency IPV declining over time in a sample of older women (Roberto & McCann, 2018). Future analysis will benefit from examining the frequency of each type of IPV to determine if there are differences in trajectories among a sample of older adult women. Additionally, future analysis could add previous experience of physical IPV as a covariate to examine whether this affects trajectories of psychological violence over the life course.

ACES and IPV Trajectories Over the Life Course

The third research question explored whether changing probabilities of IPV were associated with ACES score and type of violence (physical, psychological, sexual) and frequency of violence (high frequency). No hypotheses were delineated across the types of IPV. Four separate GLMM models were developed based on type of IPV experienced.

Models 5 through 8: IPV and ACES

Model results indicated that ACES score did not significantly affect the trajectory of physical, psychological, or sexual IPV over the life course. Additionally, model results indicated that ACES score did not significantly affect the trajectory of high frequency IPV over the life course.

An ACES score of four or higher is considered to be a clinically significant high score, which is correlated to adverse health and mental health outcomes later in life (Felitti et al., 1998; Noll et al, 2009; Ports et al., 2016). Of note, the women in this sample scored, on average, a 3.5 on their ACES (SD = 2.2). ACES scores for this sample

did not significantly affect the trajectories of the probability of experiencing IPV by type or frequency over the life course. Previous studies have connected adverse childhood experiences to a greater likelihood of experiencing IPV, though none have examined the impact of ACES scores specifically on trajectories or frequency of IPV (Afifi et al., 2009; Cohen et al., 2000; Felitti et al., 1998). Given that every participant in this study's sample experienced IPV at least once in their lifetime, the findings from this study are not in contrast to previous literature. Rather, more studies are needed to test whether ACES scores impact the trajectories of IPV experienced over the life course. Additionally, ACE studies have suggested that witnessing IPV or experiencing abuse as a child is correlated with experiencing IPV in adolescence or adulthood (Afifi et al., 2009; Jung et al., 2019). Future analysis may benefit from examining specific ACE questions (e.g. witnessing IPV) to assess their impact on predicted IPV trajectories rather than overall ACES score.

Trajectories of IPV-related Help-Seeking Over the Life Course

The fourth research question explored the characteristics of IPV-related help-seeking trajectories by age, IPV type (physical, psychological, and sexual) and frequency (high frequency IPV). No hypotheses of help-seeking trajectories were delineated. One GLMM model was developed based on IPV-related help-seeking over time.

Model 9: Characteristics of IPV-related Help-seeking Trajectories. The model evaluated the probabilities of help-seeking if the participant was currently experiencing IPV in a given year (contemporaneous) and if they had experienced IPV in the past and/or for more than one year (cumulative). For example, in a given relationship year, participants could have a cumulative physical IPV score of 5 (indicating 5 years of total physical IPV experienced up until that relationship year) and also still be

experiencing physical IPV in that same year (score of 1 = "yes"; considered contemporaneous). For some relationship years, participants may have a cumulative score of 5 in a given year but have a score of zero for contemporaneous physical IPV (score "0" for no physical IPV experienced currently).

The probability of seeking IPV-related help increased earlier in the life course and then declined. This supports past findings that older adult women do not seek IPV-related help as often as younger women (Brandl et al., 2003: Dunlop et al., 2005; Leisey et al., 2009; Straka & Montminy, 2006). Previous literature suggests that older women seeking services often perceive IPV-related resources to be exclusively for younger women (Brandl et al., 2003). Peer support programs often lack older-aged peers and outreach materials often do not present images of older adults (Brandl et al., 2003; Leisey et al., 2009; Straka & Montminy, 2006). Aging networks lack training in IPV awareness, screening, and interventions, which may produce fewer IPV-related help-seeking opportunities (Pillemer et al., 2015; Straka & Montminy, 2006). In addition, future analysis would benefit from examining the effectiveness of previous help-seeking to determine if previous perceived effectiveness impacts trajectories of help-seeking during subsequent experiences of IPV.

The occurrence of IPV of all types significantly affected trajectories of help-seeking behavior. Women in this sample were more likely to seek help if they were currently experiencing physical IPV, but were less likely to seek help if they experienced physical IPV in the past and/or for more than one year. This supports previous findings that women are more likely to seek help for IPV that results in injury, as injuries are associated with an immediate need for services such as healthcare (Duterte et al., 2008:

Kamimura et al., 2013). It is possible that an overall decline of physical IPV later in life may explain why women were less likely to seek help if they experienced IPV in the past and/or for more than one year (Johnson et al., 2015; O'Leary, 1999; Shortt et al., 2012). However, future analysis would benefit from examining the effectiveness of previous help-seeking to determine if previous perceived effectiveness impacts trajectories of help-seeking during subsequent experiences of physical IPV.

Participants were likely to seek help for psychological IPV whether they were experiencing it in a given year and/or if they had been experiencing psychological IPV for more than one year. This supports literature suggesting greater help-seeking is positively associated with psychological abuse (Lewis et al., 2006; Rizo et al., 2016) and that a greater number of psychological IPV events experienced (i.e. cumulative psychological IPV) leads to more help-seeking behaviors (Sabina & Tindale, 2008). This finding also supports research that suggests psychological IPV may have lasting negative impacts on physical and mental health, which may result in women seeking informal and formal help even after the violence has ended (Kamimura et al., 2013; Rizo et al., 2016).

In a given year, women were less likely to seek help for sexual IPV if they were currently experiencing sexual IPV, but were more likely to seek help if they experienced sexual IPV in the past and/or for more than one year. This supports previous findings that show women are unlikely to report sexual IPV while experiencing it due to stigma of victimization (Kapur & Windish, 2011). While stigma is still prevalent today, it should be noted that women in this study entered into intimate relationships in the 1960s, 70s, and 80s when marital rape laws were still largely absent in states (Jackson, 2015). It is possible that women did not seek assistance for sexual IPV if they were married given

that marital rape was still legal. Sexual IPV has lasting mental and physical health impacts, however, and the cumulative sexual IPV finding on help-seeking supports studies that suggest women may seek help even after sexual IPV has ended (Kamimura et al., 2013; Rizo et al., 2016).

Finally, experiencing high frequency IPV did not have a significant impact on IPV-related help-seeking. This is in contrast to previous studies that suggest greater IPV frequency is linked to greater help-seeking, such as obtaining a protective order for severe physical IPV (Meyer, 2010; Rizo et al., 2016; Sabina & Tindale, 2008). For this sample of women, the type of IPV experienced rather than frequency may have led to IPV-related help-seeking. For instance, experiencing a physical IPV event requiring medical assistance may have led to help-seeking, while physical IPV that was frequent (i.e. high frequency) but did not require medical assistance may have resulted in no IPV-related help-seeking as shown in previous literature (Duterte et al., 2008: Kamimura et al., 2013). The lack of criminalization of marital rape when women were younger may have prevented help-seeking for sexual IPV even if it was reported as high frequency (Jackson, 2015). Future analysis will benefit from examining the frequency of each type of IPV to determine if there are differences in trajectories of help-seeking among a sample of older adult women.

Age and type of IPV (both cumulative and contemporaneous) significantly impacted the trajectories of help-seeking over the life course. IPV results in both short and long-term physical and mental health consequences, which may result in women seeking IPV-related help even after violence has ended. Additionally, help-seeking may be delayed for some women who experience IPV (Kamimura et al., 2013). Previous

studies examining help-seeking often recruit from community organizations where women are already seeking IPV-related help, which prevents researchers from gathering insights regarding why some women do not seek IPV-related help (Rizo et al., 2016). Social workers and other practitioners should be aware of the recurrent nature of IPV experiences, the prevalence of types of abuse over the life course, and the lasting impact of IPV on physical and mental health later in life and how these experiences impact help-seeking throughout the life course to better tailer services and interventions for women of all ages. Future research would benefit by examining help-seeking behavior and the effectiveness of help-seeking over the life course for further recommendations on assisting older women.

Life Course Theory

The findings from this study suggest that exploring the experiences of IPV within a Life Course framework may be useful for understanding how IPV experience, help-seeking, and aging are dynamic and influence each other across the life course.

Timing of Events

In the proposed research study, the timing of events was captured by retrospectively examining the trajectory of IPV events as well as events correlated with IPV annually from the age of 16 to the participant's age at time of data collection. The findings from this study support literature that suggest women may experience violence for different amounts of time and at varying degrees over the life course (Rennison, 2001; Wilke & Vinton, 2005; Zink et al., 2003). There was significant variability between experiences of violence, which suggests that future analysis should incorporate other events that may impact trajectories (e.g. the birth of children, the gain or loss of

employment). Additionally, the timing of the type of IPV experienced (whether contemporaneous or in the past) significantly impacted IPV-related help-seeking in this study. The findings from this study support the principle that timing of events significantly impact the trajectory of later events in life, such as IPV experience or IPV-related help-seeking.

Interplay of Human Lives and Historical Times

The interplay of human lives and historical times, also referred to as time and place, considers the impacts of cultural shifts and sociopolitical events on an individual's life course (Elder & Johnson, 2003). Expectations and beliefs about roles based on age are created through societal norms for age groups, such as when women typically give birth. In this study, cultural shifts and sociopolitical events were considered that may have impacted trajectories of the sample. For instance, identifying when marital rape was outlawed in the United States was necessary to adequately interpret the trajectories of sexual IPV among older adult women by age at interview. Though participants were not asked about the impact of historical shifts directly within the study, understanding the importance of the cultural shifts of how IPV is defined in broader society was integral for interpretation of the results. Healthcare providers and medical social workers should keep this historical context in mind when conducting safety screenings, including IPV screenings, with older adults. Utilizing behavioral indicators of abuse, for instance, acknowledges that definitions of IPV are shaped by the historical context of the patient and may lead to a greater likelihood that IPV experiences are detected among older adult women.

Linked Lives

Linked lives are individuals within a person's social network throughout the life course, such as family and friends (Elder Jr., 2006). The impact of relationships, including generational succession, throughout the life course are acknowledged within the concept of linked lives. This tenet asserts that roles and events can impact individuals across generations. Intergenerational poverty or family violence are examples of events that impact relationships and event trajectories over multiple generations. It is also possible that childhood abuse is a turning point that sets the individual on a trajectory of abuse that continues throughout adulthood and into older adulthood. In this study, intergenerational family violence was captured by asking participants about adverse childhood experiences that may have impacted the trajectory of IPV over the life course. While total ACE scores were not found to significantly affect trajectories of IPV in this study, future analysis would benefit from examining specific types of ACES such as experiencing child abuse earlier in life. Additionally, help-seeking behaviors from informal support systems (e.g. family, friends, spiritual advisors) were identified in this study, which captured the utilization of social relationships throughout the life course for older adult women experiencing IPV. Peers were reported as the most common source of informal help-seeking for women, with findings supporting studies that peer-based advocacy is a fundamental intervention for women experiencing IPV across the life course regardless of age (Brandle et al., 2003; Tetterton & Farnswarth, 2011).

Human Agency in Choice Making

Human agency asserts that choice-making by the individual allows for free will (Elder Jr., 2006). Human agency can account for differences in life trajectories among

individuals within similar environments and with similar experiences in early life. This principle supports a social constructionist view of how individuals have agency to shape their life course. The ability to make choices and direct one's life is difficult to define and measure, as social structures can affect an individual's ability to make choices. In this research study, the consideration of human agency was considered when interpreting the results. For example, the help-seeking behaviors collected from participants provided insight into how individuals utilized resources to overcome loss and negative consequences that may impact the women over their life course.

Roberto and McCann (2018) suggest examining constrained choice when applying LCT to IPV research. Constrained choice acknowledges individual agency within individual circumstances and histories that may limit choice. For example, women's choices regarding relationships in their older adulthood may be constrained by past experiences with intimate relationships in their younger years (Roberto & McCann, 2018). In the sample of women from the current study, nearly half of the women reported two or more abusive partners in their lifetime. Some women experienced more than 20 years of continuous IPV. Without experiencing or witnessing healthy relationships in the past, women may view problematic behaviors in relationships as "normal" rather than as red flags, thus creating constrained choices for relationships (Roberto & McCann, 2018). Additionally, IPV relationships can create a constrained choice environment for women when their partners limit their social support circles and employment opportunities (Yoshihama et al., 2006).

Life-span Development

Life-span development accounts for biological, social, and psychological change in adulthood, including older adulthood. Social norms for age groups shape expectations and beliefs about roles for individuals (Elder Jr., 2006). These expectations of roles impact event trajectories, such as the age when women typically give birth. Additionally, life-span development considers that an individual's life stage may impact the consequences of events that occur within a specific time period. For instance, employment loss as a younger adult may have a lesser impact compared to an older adult reaching retirement age. Ageism and changes in physical and cognitive ability may create barriers to an older adult finding new employment. Though not included in the analysis for this current study, life-span development was captured by identifying critical events connected to IPV events over the life course, such as the birth of children and employment changes. Future analysis of this data will consider how life-span development impacts trajectories of IPV by type and frequency.

Limitations

This study has several limitations. The number of participants in this study was relatively small. Women who have experienced IPV in the past or are currently experiencing IPV often do not wish to talk about their experience, which can limit recruitment (Tarzia et al., 2017; Yoshihama & Bybee, 2011). The data gathered were limited to self-report, which is subject to self-report bias. However, self-report is currently the best viable option for gathering data on IPV experiences over the life course and has not been found to be associated with social desirability bias (Arias & Beach, 1987; Dutton & Hemphill, 1992; Saunders, 1986). It is possible that some types of IPV

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experienced by the women in the study were not captured due to differences in definitions of violence. To help prevent this, behavior-specific questions were asked. In addition, participants were asked to include any experiences of fear or violence not listed in the respondent booklet.

The study utilized a retrospective rather than prospective longitudinal design. It is possible that some respondents were not able to remember all the details about their life experiences, especially older respondents whose recall period was longer. To address this, the LHC method was used, which enhances the quality of self-report for older respondents compared to widely-used structured interview methods (Belli et al., 2001; Yoshihama et al., 2005).To address the possibility of incomplete and/or inaccurate recall of events, less sensitive events (e.g. birth of a child, employment, schooling) were first asked about and recorded in the LHC. The calendar itself was used as a visual tool to aide in recall, which also helped the researcher and respondent address any discrepancies in dates of events. The LHC has been assessed for reproducibility and found to be a highly reliable tool for collecting retrospective responses to experiences of IPV, including timing, duration, and frequency (Yoshihama et al., 2005).

Generalizability

Availability sampling was utilized in this study rather than random to ensure feasibility; however, this type of sampling method prevents generalizing results to a broader population (Rubin & Babbie, 2005). Additionally, due to the COVID-19 pandemic, almost all data collection was completed online using Zoom video conferencing, which limited participation to women with computer or tablet access and internet connection. Generalizability is also limited by the sample demographics. The

sample was racially homogenous, cis gendered, and were primarily in intimate relationships with men. There may be differences in how Black and Indigenous women, as well as women that identify as part of the LGBTQI+ community, experience IPV and seek help for IPV that are unaccounted for in this study (Campbell et al., 1997; Lee et al., 2002: Thompson et al., 2000; Yoshihama, 2002). The majority of women in the study had at least a bachelor's degree, which is a higher level of education than the general population in the United States (U.S. Census Bureau, 2020). Women in this study may have been able to access beneficial resources (such as employment opportunities) that women without college degrees may not have been able to access to during their IPV experiences.

Given the research gaps in older adult IPV research, the findings from this study still provide useful insights into the life course of abuse. Findings from a smaller geographical location can still provide a basis for the scope of the problem elsewhere (Rubin & Babbie, 2005). The LHC thus far only been utilized within a few studies of IPV across the lifespan. Further study of IPV utilizing the LHC method with a population of women from a different geographical location will contribute to the developing literature of the victimization of women across the life course. Ideally, these findings will contribute to the development of a funded research study that examines IPV over the life course with a nationally representative sample of women. Additionally, findings from this study may contribute to the development of age-appropriate interventions for women experiencing IPV in the Southwest United States.

Social Work Implications

Social Work Practice

By capturing experiences of IPV and help-seeking behavior, this research contributes to social work practice among older adults in the fields of EM, health care, and IPV. By asking older adult women about specific IPV events throughout their lifetime, this research contributes to the recommendation that access to supportive services be adapted for older adult women (e.g., Straka & Montminy, 2006; Tetterton & Farnsworth, 2011). Examining the effectiveness of specific help-seeking behavior helps social workers identify ideal entry points for IPV screening and providing outreach. Additionally, this research illustrates how help-seeking behavior changes across the life course. By asking older adult women to define violence in their own words and through their own experiences, this research assists social workers in adapting outreach materials in ways that fit with the cohorts of the older age groups.

Capturing the trajectory of IPV across the life course contributes to literature suggesting that there needs to be increased advocacy for older adult women experiencing IPV. Furthermore, an understanding of abuse across the life course may impact practitioners risk assessment procedures. For instance, older adults are typically in contact with physicians and other medical professionals more often than younger adults, creating an opportunity for medical social workers to access high risk individuals (Cornwell et al., 2008). The data contributes to the suggestion from other studies that older adult women should be screened for IPV at the doctor's office (e.g., Lachs & Pillemer, 2004; Yechezkel & Ayalon, 2013).

Ideally, these findings will prompt social work clinicians to not only assess for IPV risk among older adult women, but to also develop adaptive safety plans with their older adult clients, including consideration of chronic illness and physical ability during development of the plans. Among the older adult population, social workers can consider how to assist clients who have indicated the perpetrator of violence is also someone with whom they provide caregiving. Additionally, the social isolation of older adult women may contribute to a lack of informal resources that may be utilized with younger women during safety planning. Findings from this study have an opportunity to bridge the gap between EM and IPV practitioners by providing an understanding of how IPV over the life course impacts and is impacted by age and help-seeking.

Accessibility of Services

Older adult women may have mobility issues or other health concerns that require special care compared to younger women seeking IPV resources (Straka & Montminy, 2006; Tetterton & Farnsworth, 2011). Older adult women tend to perceive IPV resources as exclusive to younger women due to the specific branding of outreach materials marketed towards women of child-bearing age (Brandl et al., 2003; Dunlop et al., 2005; Leisey et al., 2009; Straka & Montminy, 2006). Shelters often lack education and training for meeting the needs of older adult women, and peer support may be difficult for older adult women to find given the isolating effects of age (Brandl et al, 2003; Leisey et al., 2009). The lack of adequate communication and shared knowledge between IPV organizations and APS services targeting EM results in many older adult women falling between the silos of care and advocacy (Pillemer & Burnes, 2015; Straka & Montminy,

2006). Therefore, adaptation of IPV services for older adult women is needed for effective intervention development.

IPV programs for older adult women can train social workers to understand the aging process, IPV, and the intersections between the two to be most effective in ensuring services are accessible to the population (Tetterton & Farnsworth, 2011). Often, programs are not created with this intersection in mind and need to be adapted for older adult women (Straka & Montminy, 2006). An adaptation of an inter-collaboration of services for IPV for older adult women, which was termed *elder-friendly*, successfully increased the use of domestic violence centers in Florida by older women (Vinton, 2003). Some adaptations of interventions for the older adult populations suggested by IPV advocates include utilizing home health agencies in IPV shelters, providing emergency shelter space within assisted living facilities, and outreach by IPV agencies at organizations that serve older adult women (Brandl & Raymond, 2012; Zink et al., 2006). Cross-training between older adult service organizations and IPV organizations through inter-agency collaboration should be pursued to help practitioners understand how best to access and assist older adult women experiencing IPV.

Training APS

In this study and previous studies, women were less likely to seek IPV-related help as they aged. One reason for this finding may be that aging networks lack training in IPV awareness, screening, and interventions, which creates fewer opportunities for older women to seek help (Pillemer et al., 2015; Straka & Montminy, 2006). A study assessing IPV knowledge among APS workers indicated a lack of education regarding prevalence of IPV among older adults (Payne, 2008). According to the supervisors, APS workers

needed more education on how to intervene with IPV perpetrators and assist victims with safety planning. Agencies with IPV training policies were more likely to collaborate with IPV programs within the community. Five implications arose as a result of the study: (1) EM training programs should be reviewed to ensure safety planning is discussed; (2) specific older adult IPV training should be created; (3) APS agencies should develop mandatory IPV training policies; (4) web-based training should be created; and (5) collaborative training between IPV agencies and APS services should be encouraged.

An establishment of protocols for how APS and IPV programs collaborate and refer to each other may help lessen tension between organizations and streamline coordination (Fisher et al., 2003). Shared definitions of abusive behavior, EM, and IPV in later life has also been found to be effective in assisting organizations with successful interagency collaboration (Brandl et al., 2006). Developing collaborations between IPV organizations and APS may ensure older adult women experiencing IPV are identified and assisted effectively and efficiently.

Social Work Policy

By capturing experiences of violence across the life course, this research contributes to a growing research base calling for policies that address IPV prevention and intervention among older adult women. The data from this study showing the trajectory of abuse and the prevalence of abuse over time supports a call for policies that requires IPV screening throughout later life (Roberto & McCann, 2018; Rosay & Mulford, 2017). The findings detailing specific IPV-related help-seeking behavior informs social workers of specific formal and/or informal support systems in which older women are in contact. For instance, while older adult women are increasingly isolated as

they age they tend to be in frequent contact with medical professionals (Cornwell et al., 2008). Additionally, capturing effective help-seeking behavior over the life course identified valuable resource needs for social workers working with older adults. For instance, social workers in Arizona should become familiar with the DOVES program (2019) through the Area Agency on Aging. This program offers assistance for adults aged 50 and older experiencing IPV by offering supportive services, legal assistance, and transitional housing. Continued or additional funding for programs assisting older adult women experiencing IPV, such as DOVES, may be allocated if more research shows that IPV remains an issue for women over the age of 40.

EM laws in the United States may be impacted by the findings. As previously stated, in many states APS investigates allegations of abuse against adults that are considered "vulnerable", or unable to make their own decisions (Title XX, 1974). This is an important distinction, because funds are allocated for APS to assist vulnerable older adults, and IPV programs generally target younger women. Older adult women experiencing IPV who do not meet the criteria of "vulnerable" fall into funding gaps. The state of California has an elder *and* dependent adult abuse law, which stipulates that, in addition to adults of any age that are deemed vulnerable, abuse of *any* adult over the age of 65 is punishable by law with jail time or fined, with punishment severity increasing as victim age increases (California Penal Code Section 368). The expansion of dependent adult abuse laws in other states to include EM without the necessity of being deemed "vulnerable" by decision-making capacity may lead to an increase in or allocation of funding targeting victimization of older adults that experience IPV.

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Social Work Curriculum

Capturing the life course of violence and help-seeking behaviors may contribute to curriculum in social work programs focused on the older adult population. With an ever-increasing aging population, social work curriculum is still developing programs and certificates for aging education (Berkman et al., 2016; Scharlach et al., 2000). Most social workers practicing currently do not have the knowledge and skills for working with the older adult population, which can enhance this population's quality of life (The John A. Hartford Foundation, 2012). There remains a lack of aging expertise among faculty, inadequate social work curriculum focusing on aging, and continued ageist attitudes among social work students (Berkman et al., 2016; Scharlach et al., 2000). The findings from this study provide additional perspective of the experience of victimization by older adult women that can be incorporated into Social Work curriculum in the fields of health care, gerontology, and IPV.

Social Work Research

This research study was developed in response to the call for more studies examining IPV among older adult women (Crockett et al., 2015). The findings provide insight into IPV across the life course, including information on prevalence among older women and help-seeking behaviors. Methodological challenges have hindered the calculation of valid estimates of IPV among older adult women. This study utilized a Life History Calendar (LHC) approach to address these methodological challenges. Utilizing the LHC as a data collection tool demonstrates creativity and innovation within the field of IPV research among older adult women. Because self-report is the most reliable way to gather IPV event data, maximizing memory retrieval is necessary to gather accurate

data. The LHC method utilized a calendar format within a semi-structured interview to assist respondents with recalling memorable events that are relatively easily recalled, such as the birth of a child, that then serve as memory aides for less easily recalled information. Conventional survey interview methods do not typically use primers to assist with memory retrieval, which results in lower reports of IPV events. The LHC method allows researchers to use cross-sectional samples to collect retrospective longitudinal data, which is both efficient and cost-beneficial. This creative and innovative strategy advances the study of IPV among older adults by allowing for an examination of IPV over the life course.

Most studies assessing IPV among older adult women ask about experiences of victimization within the last 12 months and use definitions of violence that older adult women may not identify as violence. This research sheds a new light on victimization and help-seeking over the life course by gathering self-report data using memory retrieval strategies and behavior-based violence indicators. It contributes to the fields of IPV, EM, and healthcare by identifying ideal entry points for family violence risk assessment and social work intervention.. This study can change medical social work practice by uncovering the need to screen older women for IPV. Given the increasing aging population in years to come, further research in this area is needed for the safety, health, and wellbeing of older adult women that may otherwise feel unseen and unheard.

REFERENCES

Acierno, R., Hernandez, M. A., Amstadter, A. B., Resnick, H. S., Steve, K., Muzzy, W., & Kilpatrick, D. G. (2010). Prevalence and correlates of emotional, physical, sexual, and financial abuse and potential neglect in the United States: The National EM Study. *American Journal of Public Health*, *100*(2), 292-297. https://doi.org/10.2105/AJPH.2009.163089

Afifi, T. O., Boman, J., Fleisher, W., & Sareen, J. (2009). The relationship between child abuse, parental divorce, and lifetime mental disorders and suicidality in a nationally representative adult sample. *Child abuse & neglect*, *33*(3), 139-147. https://doi.org/10.1016/j.chiabu.2008.12.009

Aiken, L.S. & West, S.G. (1991). *Multiple Regression: Testing and Interpreting Interactions.* Sage Publications: Thousand Oaks, CA.

Anderson, K. A., Richardson, V. E., Fields, N. L., & Harootyan, R. A. (2013). Inclusion or exclusion? Exploring barriers to employment for low-income older adults. *Journal of Gerontological Social Work*, *56*(4), 318-334. https://doi.org/10.1080/01634372.2013.777006

Anetzberger, G. J. (2001). Elder abuse identification and referral: The importance of screening tools and referral protocols. *Journal of Elder Abuse & Neglect*, *13*(2), 3-22. https://doi.org/10.1300/J084v13n02_02

American Bar Association Commission on Law and Aging (2020, April). Types of abuse defined in adult protective services. https://www.americanbar.org/content/dam/aba/administrative/law_aging/2020-abuse-definitions.pdf

Arata, C. M. (2002). Child sexual abuse and sexual revictimization. *Clinical Psychology: Science and Practice, 9*(2), 135-164. https://doi.org/10.1093/clipsy.9.2.135

Area Agency on Aging Region One. (2019). Doves program. https://www.aaaphx.org/program-services/doves-program/

Arias, I., & Beach, S. R. (1987). Validity of self-reports of marital violence. *Journal of Family Violence*, *2*(2), 139-149. https://doi.org/ 10.1007/BF00977038

Arizona Corporation Commission. (2019, August 27). New Arizona law to help protect vulnerable adults and seniors from financial exploitation. https://www.azcc.gov/

Arizona Revised Statutes, 13 USC, §§ 13 – 3623 (2013).

Baker, M. W., LaCroix, A. Z., Wu, C., Cochrane, B. B., Wallace, R., & Woods, N. F.

(2009). Mortality risk associated with physical and verbal abuse in women aged 50 to 79. *Journal of the American Geriatrics Society*, *57*(10), 1799-1809. https://doi.org/10.1111/j.1532-5415.2009.02429.x

Baltes, P. B., Lindenberger, U., & Staudinger, U. M. (1998). Life-span theory in developmental psychology. In *Handbook of Child Psychology* (pp. 1029-1143). Wiley.

Band-Winterstein, T., & Eisikovits, Z. (2009). "Aging out" of violence: The multiple faces of intimate violence over the life span. *Qualitative Health Research*, *19*(2), 164-180. https://doi.org/10.1177/1049732308329305

Barrett, B. J., & Pierre, M. S. (2011). Variations in women's help seeking in response to intimate partner violence: Findings from a Canadian population-based study. *Violence Against Women*, *17*(1), 47-70. https://doi.org/10.1177/1077801210394273

Bates, D., Machler, M., Bolker, B., & Walker, S. (2015). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software, 67*(1), 1–48. doi: 10.18637/jss.v067.i01

Beaulaurier, R. L., Seff, L. R., Newman, F. L., & Dunlop, B. (2007). External barriers to help seeking for older women who experience IPV. *Journal of Family Violence*, *22*(8), 747-755. https://doi.org/10.1007/s10896-007-9122-y

Bell, A., & Jones, K. (2015). Age, period and cohort processes in longitudinal and life course analysis: A multilevel perspective. In Burton-Jeangros, C., Cullati, S., Sacker, A., & Blane, D. (Eds.), *A life course perspective on health trajectories and transitions* (pp. 197-213). New York: Springer.

Belli, R., Stafford, F., & Alwin, D. (Eds.). (2009). *Measuring well-being: Using calendar and time diary methods in life course research.* Thousand Oaks, CA: SAGE.

Berkman, B., Silverstone, B., June Simmons, W., Volland, P. J., & Howe, J. L. (2016). Social work gerontological practice: The need for faculty development in the new millennium. *Journal of Gerontological Social Work*, *59*(2), 162-177. https://doi.org/10.1300/J083v34n01_02

Biesanz, J. C., Deeb-Sossa, N., Papadakis, A. A., Bollen, K. A., & Curran, P. J. (2004). The role of coding time in estimating and interpreting growth curve models. *Psychological Methods*, *9*(1), 30. https://doi.org/10.1037/1082-989X.9.1.30

Bonomi, A. E., Anderson, M. L., Rivara, F. P., & Thompson, R. S. (2007). Health outcomes in women with physical and sexual IPV exposure. *Journal of Women's Health*, *16*(7), 987-997. https://doi.org/10.1089/jwh.2006.0239

Bookwala, J., Sobin, J., & Zdaniuk, B. (2005). Gender and aggression in marital relationships: A life-span perspective. *Sex Roles*, *52*(11-12), 797-806. https://doi.org/10.1007/s11199-005-4200-1

Brandl, B., Dyer, C. B., Heisler, C. J., & Otto, J. M. (2006). Enhancing victim safety through collaboration. *Care Management Journals*, *7*(2), 64. https://doi.org/10.1891/cmaj.7.2.64

Brandl, B., Hebert, M., Rozwadowski, J., & Spangler, D. (2003). Feeling safe, feeling strong: Support groups for older abused women. *Violence Against Women*, *9*(12), 1490-1503. https://doi.org/10.1177/1077801203259288

Brandl, B., & Raymond, J. (2012). Policy implications of recognizing that caregiver stress is not the primary cause of elder abuse. *Generations, 36*(3), 32-39.

Burnes, D., Zhao, R., & Pillemer, K. (2017). Violence and Aggression against Older Adults: What Works? What Works Best?. *The Wiley Handbook of Violence and Aggression*, 1-12. https://doi.org/10.1002/9781119057574.whbva106

Caetano, R., Vaeth, P. A., & Ramisetty-Mikler, S. (2008). IPV victim and perpetrator characteristics among couples in the United States. *Journal of Family Violence*, *23*(6), 507-518. https://doi.org/10.1007/s10896-008-9178-3

California Penal Code § 368(b)(1)

Campbell, D., Masaki, B., & Torres, S. (1997). Water on the rock: Changing domestic violence perception in the African American, Asian American, and Latino communities. In E. Klein, J. Campbell, E. Soler, & M. Ghez (Eds.), *Ending domestic violence: Changing public perception/halting the epidemic*.

Campbell, J. C., Webster, D. W., & Glass, N. (2009). The danger assessment: Validation of a lethality risk assessment instrument for intimate partner femicide. *Journal of Interpersonal Violence*, *24*(4), 653-674. https://doi.org/10.1177/0886260508317180

Caspi, A., Moffitt, T. E., Thornton, A., Freedman, D., Amell, J. W., Harrington, H., ... & Silva, P. A. (1996). The life history calendar: A research and clinical assessment method for collecting retrospective event-history data. *International Journal of Methods in Psychiatric Research 6*(2), 101–114. https://doi.org/10.1002/(SICI)1234-988X(199607)6:2<101::AID-MPR156>3.3.CO;2-E

Cohen, M., Deamant, C., Barkan, S., Richardson, J., Young, M., Holman, S., ... &

Melnick, S. (2000). Domestic violence and childhood sexual abuse in HIV-infected women and women at risk for HIV. *American Journal of Public Health*, *90*(4), 560. https://doi.org/ 10.2105/ajph.90.4.560

Cook, J. M., Dinnen, S., & O'Donnell, C. (2011). Older women survivors of physical and sexual violence: a systematic review of the quantitative literature. *Journal of Women's Health*, *20*(7), 1075-1081. https://doi.org/10.1089/jwh.2010.2279

Cornwell, B., Laumann, E. O., & Schumm, L. P. (2008). The social connectedness of older adults: A national profile. *American Sociological Review*, *73*(2), 185-203. https://doi.org/10.1177/000312240807300201

Crockett, C., Brandl, B., & Dabby, F. C. (2015). Survivors in the margins: The invisibility of violence against older women. *Journal of Elder Abuse & Neglect*, *27*(4-5), 291-302. https://doi.org/10.1080/08946566.2015.1090361

Curry, S. J., Krist, A. H., Owens, D. K., Barry, M. J., Caughey, A. B., Davidson, K. W., ... & Kubik, M. (2018). Screening for IPV, elder abuse, and abuse of vulnerable adults: US Preventive Services Task Force final recommendation statement. *Jama*, *320*(16), 1678-1687. 320(16):1678-1687. doi:10.1001/jama.2018.14741

Cyphers, G. (1999). Estimating elder abuse through community sentinels: results of the National Elder Abuse Incidence Study. *Research and Information Center at American Public Human Services Association. 31*(12), 2007. http://www. nawrs. org/ClevelandPDF/cypher.

Daly, J. M., Hartz, A. J., Stromquist, A. M., Peek-Asa, C., & Jogerst, G. J. (2008). Self-reported elder domestic partner violence in one rural Iowa county. *Journal of Emotional Abuse*, *7*, 115-134. https://doi.org/10.1300/J135v07n04_06

Del, G. B., Stermac, L., & Bainbridge, D. (2005). Comparisons of sexual assault among older and younger women. *Journal of Elder Abuse & Neglect*, *17*(3), 1-18. https://doi.org/10.1300/J084v17n03_01

Dong, X. Q., Simon, M. A., Beck, T. T., Farran, C., McCann, J. J., De Leon, C. M., ... & Evans, D. A. (2011). Elder abuse and mortality: the role of psychological and social wellbeing. *Gerontology*, *57*(6), 549-558. https://doi.org/10.1159/000321881

Dube, S. R., Cook, M. L., & Edwards, V. J. (2010). Peer reviewed: Health-related outcomes of adverse childhood experiences in Texas, 2002. *Preventing Chronic Disease*, *7*(3). http://www.cdc.gov/pcd/issues/2010/may/09_0158.htm

Duffy, M. (2002). Confidentiality and informed consent versus collaboration: Challenges

of psychotherapy ethics in nursing homes. *Clinical Gerontologist, 25*(3-4), 277–292. https://doi.org/10.1300/J018v25n03_05

Dunlop, B. D., Beaulaurier, R. L., Seff, L. R., Newman, F. L., Malik, N., & Fuster, M. (2005, April). Domestic violence against older women: Final technical report. *Final Report for National Institute of Justice, grant*, (2002-WG). https://www.ojp.gov/pdffiles1/nij/grants/212349.pdf

Duterte, E. E., Bonomi, A. E., Kernic, M. A., Schiff, M. A., Thompson, R. S., & Rivara, F. P. (2008). Correlates of medical and legal help seeking among women reporting intimate partner violence. *Journal of Women's Health, 17*(1), 85-95. https://doi.org/10.1089/jwh.2007.0460

Dutton, D. G., & Hemphill, K. J. (1992). Patterns of socially desirable responding among perpetrators and victims of wife assault. *Violence and Victims*, *7*(1), 29. https://doi.org/ 10.1891/0886-6708.7.1.29

Eisikovits, Z., & Band-Winterstein, T. (2015). Dimensions of suffering among old and young battered women. *Journal of Family Violence*, 30, 49–62. https://doi.org/10.1007/s10896-014-9655-9

Elder Jr, G. H. (1994). Time, human agency, and social change: Perspectives on the life course. *Social Psychology Quarterly, 57*(1), 4-15. https://doi.org/10.2307/2786971

Elder Jr, G. H. (2006). Life course. In Schulz, R. (Ed.), *Encyclopedia of aging* (pp. 643 – 647). New York: Springer.

Elder Jr., G.H., & George, L.K. (2017). Age, cohorts, and the life course. In Mortimer, J.T., Shanahan, M.J., & Johnson, M. K. (Eds.), *Handbook of the life course* (pp. 59-85). Boston: Springer.

Elder, G. H., & Johnson, M. K. (2003). The life course and aging: Challenges, lessons, and new directions. In R. A. Settersten, Jr. (Ed.), *Invitation to the life course: Toward new understandings of later life* (pp. 49-81). New York: Baywood.

Enguidanos, S. M., DeLiema, M., Aguilar, I., Lambrinos, J., & Wilber, K. H. (2014). Multicultural voices: Attitudes of older adults in the United States of America about EM. *Ageing & Society*, *34*(5), 877-903. https://doi.org/ 10.1017/S0144686X12001389

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse

Childhood Experiences (ACE) study. *American Journal of Preventive Medicine*, *14*(4), 245-258. https://doi.org/10.1016/S0749-3797(98)00017-8

Finch, W. H., Bolin, J. E., & Kelley, K. (2019). *Multilevel modeling using R*. CRC Press, Taylor & Francis Group.

Fisher, B. S., & Regan, S. L. (2006). The extent and frequency of abuse in the lives of older women and their relationship with health outcomes. *The Gerontologist*, *46*(2), 200-209. https://doi.org/10.1093/geront/46.2.200

Fisher, B. S., Zink, T., Pabst, S., Regan, S., & Rinto, B. (2003). Services and programming for older abused women: The Ohio experience. *Journal of Elder Abuse & Neglect*, *15*(2), 67-83. https://doi.org/10.1300/J084v15n02_04

Ford, D. C., Merrick, M. T., Parks, S. E., Breiding, M. J., Gilbert, L. K., Edwards, V. J., ... & Thompson, W. W. (2014). Examination of the factorial structure of adverse childhood experiences and recommendations for three subscale scores. *Psychology of Violence*, *4*(4), 432. https://doi.org/10.1037/a0037723

Freedman, D., Thornton, A., Camburn, D., Alwin, D., & Young-DeMarco, L. (1988). The life history calendar: A technique for collecting retrospective data. *Sociological Methodology*, 37-68. https://doi.org/10.2307/271044

Grimm, K., Ram, N., & Estabrook, R. (2017). Growth Modeling: Structural Equation and Multilevel Modeling Approaches. Guilford Publications.

Hareven, T. K. (1994). Aging and generational relations: A historical and life course perspective. *Annual Review of Sociology*, *20*(1), 437-461. https://www.jstor.org/stable/2083373

Harris, P. A., Scott, K. W., Lebo, L., Hassan, N., Lighter, C., & Pulley, J. (2012). ResearchMatch: A national registry to recruit volunteers for clinical research. *Academy of Medicine, 87*(1), 66-73. https://doi.org/ 10.1097/ACM.0b013e31823ab7d2

Hasday, J. E. (2000). Contest and consent: A legal history of marital rape. *California Law Review, 88*(5)*,* 1373 - 1505. https://doi.org/10.2307/3481263

Hayes, B. E. (2016). Impact of victim, offender, and relationship characteristics on frequency and timing of intimate partner violence using life history calendar data. *Journal of Research in Crime and Delinquency*, *53*(2), 189-219. https://doi.org/10.1177/0022427815597038

Holzman, H. R., Hyatt, R. A., & Dempster, J. M. (2001). Patterns of aggravated assault in

public housing: Mapping the nexus of offense, place, gender, and race. *Violence Against Women, 7*(6), 662-684. https://doi.org/10.1177/10778010122182659

Jackson, A. L. (2015). State contexts and the criminalization of marital rape across the United States. *Social Science Research, 51*, 290-306. https://doi.org/10.1016/j.ssresearch.2014.10.001

Jasinski, J. L., & Dietz, T. L. (2004). Domestic violence and stalking among older adults: An assessment of risk markers. *Journal of Elder Abuse & Neglect*, *15*(1), 3-18. https://doi.org/10.1300/J084v15n01_02

John, A. (2012). Hartford foundation. *How Does It Feel? The Older Adult Health Care Experience*. https://www.johnahartford.org/dissemination-center/view/john-a.-hartford-foundation-public-poll-how-does-it-feel-the-older-adult-he

Johnson, W. L., Giordano, P. C., Manning, W. D., & Longmore, M. A. (2015). The age–IPV curve: Changes in the perpetration of intimate partner violence during adolescence and young adulthood. *Journal of Youth and adolescence, 44*(3), 708-726. https://doi.org/10.1007/s10964-014-0158-z

Jung, H., Herrenkohl, T. I., Skinner, M. L., Lee, J. O., Klika, J. B., & Rousson, A. N. (2019). Gender differences in intimate partner violence: A predictive analysis of IPV by child abuse and domestic violence exposure during early childhood. *Violence Against Women, 25*(8), 903-924. https://doi.org/10.1177/1077801218796329

Kamimura, A., Yoshihama, M., & Bybee, D. (2013). Trajectory of intimate partner violence and healthcare seeking over the life course: study of Japanese women in the Tokyo metropolitan area, Japan. *Public Health, 127*(10), 902-907. https://doi.org/10.1016/j.puhe.2013.06.003

Kapur, N. A., & Windish, D. M. (2011). Health care utilization and unhealthy behaviors among victims of sexual assault in Connecticut: results from a population-based sample. *Journal of General Internal Medicine*, *26*(5), 524-530. https://doi.org/10.1007/s11606-010-1614-4

Kim, E., Dedrick, R., Cao, C., & Ferron, J. (2016). Multilevel factor analysis: Reporting guidelines and a review of reporting practices. *Multivariate Behavioral Research*, *51*(6), 881–898. https://doi.org/10.1080/00273171.2016.1228042

Lachs, M.S., & Pillemer, K. (2004). Elder abuse. *The Lancet, 364*(9441), 1263 – 1272. https://doi.org/10.1016/S0140-6736(04)17144-4

Lachs, M. S., Williams, C., O'Brien, S., Hurst, L., & Horwitz, R. (1997). Risk factors for

reported elder abuse and neglect: A nine-year observational cohort study. *The Gerontologist*, *37*(4), 469-474. https://doi.org/10.1093/geront/37.4.469

Lee, R. K., Thompson, V. L. S., & Mechanic, M. B. (2002). Intimate partner violence and women of color: A call for innovations. *American Journal of Public Health, 92*(4), 530-534. https://doi.org/10.2105/AJPH.92.4.530

Leisey, M., Kupstas, P. K., & Cooper, A. (2009). Domestic violence in the second half of life. *Journal of Elder Abuse & Neglect*, *21*(2), 141-155. https://doi.org/10.1080/08946560902779951

Lewis, C. S., Griffing, S., Chu, M., Jospitre, T., Sage, R. E., Madry, L., & Primm, B. J. (2006). Coping and violence exposure as predictors of psychological functioning in domestic violence survivors. *Violence Against Women, 12*(4), 340-354. https://doi.org/10.1177/1077801206287285

Lin, N., Ensel, W. M., & Lai, W. F. G. (1997). Construction and use of the life history calendar: reliability and validity of recall data. In Gotlib, I., & Wheaton, B. (Eds.), *Stress and adversity over the life course: Trajectories and turning points* (pp. 249-272). Cambridge: Cambridge University Press.

Love, K. (2018). What is GLMM and when should you use it? [Webinar]. The Analysis Factor. https://thecraftofstatisticalanalysis.com/webinar-recording-video-page/?cosid=609

Lundy, M., & Grossman, S. F. (2009). Domestic violence service users: A comparison of older and younger women victims. *Journal of Family Violence*, *24*(5), 297-309. https://doi.org/10.1007/s10896-009-9230-y

Madruga, C. S., Viana, M. C., Abdalla, R. R., Caetano, R., & Laranjeira, R. (2017). Pathways from witnessing parental violence during childhood to involvement in IPV in adult life: The roles of depression and substance use. *Drug and Alcohol Review*, *36*(1), 107-114. https://doi.org/10.1111/dar.12514

McDonald, L., & Thomas, C. (2013). Elder abuse through a life course lens. *International Psychogeriatrics*, *25*(8), 1235-1243. https://doi.org/10.1017/S104161021300015X

McGarry, J., & Simpson, C. (2011). Domestic abuse and older women: exploring the opportunities for service development and care delivery. *The Journal of Adult Protection*, *13*(6), 294-301. https://doi.org/10.1108/14668201111194203

McGuire, J. (2009). Ethical considerations when working with older adults in psychology. *Ethics & Behavior*, *19*(2), 112-128. https://doi.org/10.1080/10508420902772702

McPherson, J. M., Popielarz, P. A., & Drobnic, S. (1992). Social networks and organizational dynamics. *American Sociological Review*, 153-170. https://doi.org/10.2307/2096202

Meinck, F., Cosma, A. P., Mikton, C., & Baban, A. (2017). Psychometric properties of the adverse childhood experiences abuse short form (ACE-ASF) among Romanian high school students. *Child Abuse & Neglect*, *72*, 326-337. https://doi.org/ 10.1016/j.chiabu.2017.08.016

Meyer, S. (2010). Responding to intimate partner violence victimisation: Effective options for help-seeking. *Trends and Issues in Crime and Criminal Justice*, 389, 1-6. https:// doi/10.3316/informit.924539009628716

Miller, E., Beach, S. R., & Thurston, R. C. (2018). Addressing intimate partner violence and abuse of older or vulnerable adults in the health care setting—beyond screening. *JAMA Internal Medicine*, *178*(12), 1583-1585. https://doi.org/ 0.1001/jamainternmed.2018.6523

Montminy, L. (2005). Older women's experiences of psychological violence in their marital relationships. *Journal of Gerontological Social Work*, *46*, 3-22. ttps://doi.org/10.1300/J083v46n02_02

Moon, A., & Evans-Campbell, T. (2000). Awareness of formal and informal sources of help for victims of elder abuse among Korean American and Caucasian elders in Los Angeles. *Journal of Elder Abuse & Neglect*, *11*(3), 1-23. https://doi.org/10.1300/J084v11n03_01

Moye, J., Karel, M. J., Azar, A. R., & Gurrera, R. J. (2004). Capacity to consent to treatment: empirical comparison of three instruments in older adults with and without dementia. *The Gerontologist*, *44*(2), 166-175. https://doi.org/10.1093/geront/44.2.166

National Association of Social Workers. (2017). NASW code of ethics. https://www.socialworkers.org/About/Ethics/Code-of-Ethics/Code-of-Ethics-English

National Research Council (NRC). (2003). *EM: Abuse, neglect, and exploitation in an aging America*. Washington, DC: The National Academies Press. https://doi.org/ 10.17226/10406

Nilon, P. H., Kearns, M., Dills, J., Rambo, K., Irving, S., Armstead, T., & Gilbert, L. (2017). Preventing IPV across the lifespan: A technical package of programs, policies, and practices. https://ncvc.dspacedirect.org/handle/20.500.11990/313

Noll, J. G., Trickett, P. K., Harris, W. W., & Putnam, F. W. (2009). The cumulative

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burden borne by offspring whose mothers were sexually abused as children: Descriptive results from a multigenerational study. *Journal of Interpersonal Violence, 24*(3), 424-449. https://doi.org/10.1177/0886260508317194

Older Americans Act Amendments, 2 USC, §§ 3001 – 3058ff (1992).

O'Leary, K. D., & Schumacher, J. A. (2003). The association between alcohol use and intimate partner violence: Linear effect, threshold effect, or both? *Addictive Behaviors, 28*(9), 1575-1585. https://doi.org/10.1016/j.addbeh.2003.08.034

Paranjape, A., Corbie-Smith, G., Thompson, N., & Kaslow, N. J. (2009). When older African American women are affected by violence in the home: A qualitative investigation of risk and protective factors. *Violence Against Women*, *15*(8), 977-990. https://doi.org/10.1177/1077801209335490

Payne, B. K. (2008). Training adult protective services workers about domestic violence: Training needs and strategies. *Violence Against Women*, *14(*10), 1199 – 1213. https://doi.org/10.1177/1077801208322702

Payne, B. K., & Policastro, C. (2016). Interventions, policies, and future research directions in family violence. *The Wiley Handbook on the Psychology of Violence*, 353-369. https://doi.org/ 10.1002/9781118303092

Pillemer, K., & Burnes, D. (2015). Worlds of difference: EM prevalence studies and clinical practice. *Gerontologist, 55*(2), 11. https://doi.org/10.1093/geront/gnv540.02

Pillemer, K., Connolly, M. T., Breckman, R., Spreng, N., & Lachs, M. S. (2015). Elder mistreatment: Priorities for consideration by the White House conference on aging. *The Gerontologist*, *55*(2), 320-327. https://doi.org/10.1093/geront/gnu180

Podnieks, E. (1993). Emerging themes from a follow-up study of Canadian victims of elder abuse. *Journal of Elder Abuse & Neglect*, *4*(1-2), 59-111. https://doi.org/10.1007/s10896-013-9506-0

Ports, K. A., Ford, D. C., & Merrick, M.T. (2016). Adverse childhood experiences and sexual victimization in adulthood. *Child Abuse & Neglect*, *51*, 313-322. https://doi.org/10.1016/j.chiabu.2015.08.017

R Core Team (2020). R: A language and environment for statistical computing. *R Foundation for Statistical Computing*. Vienna: Austria. https://www.R-project.org/

Rennison, C. M. (2001). *Intimate Partner Violence and Age of Victim, 1993-99* (NCJ 187635). Washington, DC: U.S. Department of Justice. http://www.ncjrs.gov/App/ publications/Abstract.aspx?id=187635

Rennison, C., & Rand, M. R. (2003). Nonlethal IPV against women: A comparison of three age cohorts. *Violence Against Women*, *9*(12), 1417 – 1428. https://doi.org/ 10.1177/1077801203259232

Rivara, F. P., Anderson, M. L., Fishman, P., Reid, R. J., Bonomi, A. E., Carrell, D., & Thompson, R. S. (2009). Age, period, and cohort effects on intimate partner violence. *Violence and Victims, 24*(5), 627-638. https://doi.org/ 10.1891/0886-6708.24.5.627

Rizo, C. F., Givens, A., & Lombardi, B. (2017). A systematic review of coping among heterosexual female IPV survivors in the United States with a focus on the conceptualization and measurement of coping. *Aggression and Violent Behavior,* 34, 35-50. https://doi.org/10.1016/j.avb.2017.03.006

Roberto, K. A., & McCann, B. R. (2018). Violence and abuse in rural older women's lives: A life course perspective. *Journal of Interpersonal Violence, 36*(3-4) 1-23. https://doi.org/ 10.1177/0886260518755490

Rosay, A. B., & Mulford, C. F. (2017). Prevalence estimates and correlates of elder abuse in the United States: The national intimate partner and sexual violence survey. *Journal of Elder Abuse & Neglect*, *29*(1), 1-14. https://doi.org/10.1080/08946566.2016.1249817

Rubin, A. & Babbie, E. R. (2005). *Research Methods for Social Work, 5th Ed*. Belmont, CA: Thompson.

Rubin, D. C., & Wenzel, A. E. (1996). One hundred years of forgetting: A quantitative description of retention. *Psychological review*, *103*(4), 734. https://doi.org/ 10.1037/0033-295X.103.4.734

Sabina, C., & Tindale, R. S. (2008). Abuse characteristics and coping resources as predictors of problem-focused coping strategies among battered women. *Violence Against Women, 14*(4), 437-456. https://doi.org/ 10.1177/1077801208314831

Saunders, D. G. (1986). When battered women use violence: Husband abuse or self-defense? *Violence and Victims*, *1*(1), 47-60. https://doi.org/ 10.1891/0886-6708.1.1.47

Scharlach, A., Damron-Rodriguez, J., Robinson, B., & Feldman, R. (2000). Educating

social workers for an aging society: A vision for the 21st century. *Journal of Social Work Education*, *36*(3), 521-538. https://doi.org/10.1080/10437797.2000.10779026

Selwood, A., Cooper, C., Owens, C., Blanchard, M., & Livingston, G. (2009). What would help me stop abusing? The family carer's perspective. *International Psychogeriatrics*, *21*(2), 309-313. https://doi.org/ 10.1017/S104161020800834X

Settersten, R. A. (ed.). (2003). *Invitation to the Life Course: Toward New Understandings of Later Life*. Amityville, NY: Baywood.

Shortt, J. W., Capaldi, D. M., Kim, H. K., Kerr, D. C., Owen, L. D., & Feingold, A. (2012). Stability of intimate partner violence by men across 12 years in young adulthood: Effects of relationship transitions. *Prevention Science, 13*(4), 360-369. https://doi.org/10.1007/s11121-011-0202-0

Sigle-Rushton, W., & Waldfogel, J. (2007). Motherhood and women's earnings in Anglo-American, Continental European, and Nordic countries. *Feminist economics*, *13*(2), 55-91. https://doi.org/10.1080/13545700601184849

Singer, J. D., & Willett, J. B. (2003). Doing data analysis with the multilevel model for change. *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*, 96-97. http://gseacademic.harvard.edu/alda/Handouts/ALDA%20Chapter%204.pdf

Smith, S. G., Basile, K. C., Gilbert, L. K., Merrick, M. T., Patel, N., Walling, M., & Jain, A. (2017). National intimate partner violence and sexual violence survey (NISVS): 2010 – 2012 state report. https://stacks.cdc.gov/view/cdc/46305

Social Security Act Title XX, 20 USC, §§1397-1397f (1974).

Soeken, K. L., McFarlane, J., Parker, B., & Lominack, M. C. (1998). The Abuse Assessment Screen: A clinical instrument to measure frequency, severity, and perpetrator of abuse against women. In J. C. Campbell (Ed.), Sage series on violence against women. Empowering survivors of abuse: Health care for battered women and their children (pp. 195-203). Thousand Oaks, CA, US: Sage Publications, Inc.

Straka, S. M., & Montminy, L. (2006). Responding to the needs of older women experiencing domestic violence. *Violence Against Women*, *12*(3), 251-267. https://doi.org/10.1177/1077801206286221

Stroup, W. (2013). *Generalized Linear Mixed Models: Modern Concepts, Methods and Applications.* CRC Press, Taylor & Francis Group.

Sutton, J. E. (2010). A review of the life-events calendar method for criminological research. *Journal of Criminal Justice*, *38*(5), 1038-1044. https://doi.org/10.1016/j.jcrimjus.2010.07.006

Tarzia, L., Valpied, J., Koziol-McLain, J., Glass, N., & Hegarty, K. (2017). Methodological and ethical challenges in a web-based randomized controlled trial of a domestic violence intervention. *Journal of Medical Internet Research*, *19*(3), e94. https://doi.org/ 10.2196/jmir.7039

Tetterton, S., & Farnsworth, E. (2011). Older women and IPV: Effective interventions. *Journal of Interpersonal Violence*, *26*(14), 2929-2942. https://doi.org/10.1177/0886260510390962

Thompson, M. P., Basile, K. C., Hertz, M. F., & Sitterle, D. (2006). *Measuring Intimate Partner Violence: A Compendium of Assessment Tools*. Atlanta: GA.

Thompson, M., Kaslow, N., Kingree, J., Rashid, A., Puett, R., Jacobs, D., & Matthews, A. (2000). Partner Violence, Social Support, and Distress Among Inner-City African American Women. American Journal of Community Psychology, 28(1), 127–143. https://doi.org/10.1023/A:1005198514704

Thompson, C. P., Skowronski, J. J., Larsen, S. F., & Betz, A. L. (2013). *Autobiographical Memory: Remembering What and Remembering When*. Psychology Press.

United Nations Department of Economic and Social Affairs, Division for Social Policy and Development. (UN DESA) (2013). Neglect, abuse and violence against older women. https://www.un.org/esa/socdev/documents/ageing/neglect-abuse-violence-older-women.pdf

United States Census Bureau. (2020, March 30). U.S. Census Bureau releases new educational attainment data. https://www.census.gov/newsroom/press-releases/2020/educational-attainment.html#:~:text=In%202019%2C%20high%20school%20was,from%202029.9%25%20to%2036.0%25.

Uttal, D. H., & Perlmutter, M. (1989). Toward a broader conceptualization of development: The role of gains and losses across the life span. *Developmental Review*, *9*(2), 101-132. https://doi.org/10.1016/0273-2297(89)90025-7

Vinton, L. (2003). A model collaborative project toward making domestic violence centers elder ready. *Violence Against Women, 9*(12), 1504 – 1513. https://doi.org/10.1177/1077801203259289

Wagenaar, W. A. (1986). My memory: A study of autobiographical memory over six

years. *Cognitive Psychology*, *18*(2), 225-252. https://doi.org/ 10.1016/0010-0285(86)90013-7

Walsh, C. A., Olson, J. L., Ploeg, J., Lohfeld, L., & MacMillan, H. L. (2010). Elder abuse and oppression: Voices of marginalized elders. *Journal of Elder Abuse & Neglect*, *23*(1), 17-42. https://doi.org/10.1080/08946566.2011.534705

Wang, B., & Dong, X. (2019). Life course violence: Child maltreatment, IPV, and elder abuse phenotypes in a US Chinese population. *Journal of the American Geriatrics Society*, *67*(S3), S486-S492. https://doi.org/10.1111/jgs.16096

Wilke, D. J., & Vinton, L. (2005). The nature and impact of domestic violence across age cohorts. *Affilia*, *20*, 316-328. https://doi.org/ 10.1177/0886109905277751

Wilkins, N., Tsao, B., Hertz, M. F., Davis, R., & Klevens, J. (2014). Connecting the dots: An overview of the links among multiple forms of violence. Atlanta: GA. https://stacks.cdc.gov/view/cdc/31552

Winterstein, T., & Eisikovits, Z. (2005). The experience of loneliness of battered old women. *Journal of Women & Aging*, *17*(4), 3-19. https://doi.org/ 10.1300/J074v17n04_02

World Health Organization. (2002). *Missing voices: Views of older persons on elder abuse* (No. WHO/NMH/VIP/02.1). Geneva: World Health Organization. https://apps.who.int/iris/bitstream/handle/10665/67371/WHO_NMH_VIP_02.1.pdf

World Health Organization. (2021, March 9). Fact sheet: Violence against women. https://www.who.int/news-room/fact-sheets/detail/violence-against-women

Wyandt, M. A. (2004). Review of Elder Abuse Literature. *Californian Journal of Health Promotion*, *2*(3), 40-52. https://doi.org/10.32398/cjhp.v2i3.879

Yechezkel, R., & Ayalon, L. (2013). Social workers' attitudes towards intimate partner abuse in younger vs. older women. *Journal of Family Violence*, *28*(4), 381-391. https://doi.org/10.1007/s10896-013-9506-0

Yoshihama, M., & Bybee, D. (2011). The life history calendar method and multilevel modeling: Application to research on intimate partner violence. *Violence Against Women*, *17*(3), 295–308. https://doi.org/10.1177/1077801211398229

Yoshihama, M., Clum, K., Crampton, A., & Gillespie, B. (2002). Measuring the lifetime experience of domestic violence: Application of the life history calendar method. *Violence and Victims*, *17*(3), 297. https://doi.org/ 10.1891/vivi.17.3.297.33663

Yoshihama, M., & Gillespie, B. W. (2002). Age adjustment and recall bias in the analysis of domestic violence data: Methodological improvements through the application of survival analysis methods. *Journal of Family Violence*, *17*(3), 199-221. https://doi.org/10.1023/A:1016001211182

Yoshihama, M., Gillespie, B., Hammock, A. C., Belli, R. F., & Tolman, R. M. (2005). Does the life history calendar method facilitate the recall of intimate partner violence? Comparison of two methods of data collection. *Social Work Research*, *29*(3), 151-163. https://doi.org/10.1093/swr/29.3.151

Yoshihama, M., Hammock, A. C., & Horrocks, J. (2006). Intimate partner violence, welfare receipt, and health status of low-income African American women: A lifecourse analysis. *American Journal of Community Psychology*, *37*(1-2), 95. https://doi.org/10.1007/s10464-005-9009-0

Zink, T., Jacobson Jr., C. J., Pabst, S., Regan, S., & Fisher, B. S. (2006). A lifetime of intimate partner violence: Coping strategies of older women. *Journal of Interpersonal Violence, 21*(5), 634-651. https://doi.org/10.1177/0886260506286878

Zink, T., Regan, S., Jacobson, C. J., & Pabst, S. (2003). Cohort, period, and aging effects: A qualitative study of older women's reasons for remaining in abusive relationships. *Violence Against Women*, *9*(12), 1429-1441. https://doi.org/10.1177/1077801203259231

APPENDIX A

RESEARCHMATCH INITIAL CONTACT TEMPLATE

Participants needed to complete an interview and survey questions online using Zoom. Have you experienced fear or harm in a romantic relationship at least once in your life? Would you be willing to discuss experiences with your romantic relationships over your life course and answer questions about your current health and wellbeing? If yes, you may qualify! Participants will receive a $20 gift card or e-gift card to the merchant of your choice for completing the interview and survey.

APPENDIX B

RECRUITMENT SCRIPT

Dear [Prospective Participant],

My name is Renee Garbe and I am a PhD Candidate completing my dissertation at the School of Social Work at ASU under the direction of Dr. Katie Cotter Stalker. I received your contact information from ResearchMatch. Thank you for your interest in our study on relationships over the life course!

If you agree to be part of the study, you will be asked to complete a survey and answer interview questions over Zoom. During the interview, you will be asked about schooling, employment, residential moves, children, and your relationships using a calendar to mark these events. You will also be asked about times during relationships when you felt afraid or experienced harm, and what help you may have sought during that time. The survey asks about early childhood adversities, current health and wellbeing, and demographic information. The interview and survey will take between 60 and 90 minutes to complete and all responses are confidential. You have the right not to answer any question, and to stop participation at any time. After answering the questions, you will be emailed a $20 electronic gift card of your choice as a thank you for participating!

If you agree to participate, I will send you a Zoom meeting link that is password protected. I will also have a "waiting room" for the Zoom meeting so that no one else can come into the room without our permission. You can access Zoom through your internet browser.

Please let me know if you would like to participate in this study, and we can set a date and time to complete the interview and survey. I'm happy to answer any questions you might have as well!

Thank you again for your interest! I hope you have a pleasant day!

Sincerely,

Renee Garbe, LMSW
Doctoral Candidate
Arizona State University
Watts College of Public Service and Community Solutions
School of Social Work
rgarbe@asu.edu

APPENDIX C

RECRUITMENT FLYER

Relationships Over the Lifecourse Research Study

Receive a $20 gift card!

What will I be asked to do?
Answer interview questions about relationships with intimate partners over your life course and complete a survey about childhood adversity and current health.
Option to interview online!

How long will it take?
60 to 90 minutes

Do I qualify?
If you are **60 years of age or older**, identify as a female, and speak fluent English, you may qualify!

For more information call **Renee** at:

520-261-7657

or email at:

rgarbe@asu.edu

Participation is voluntary. Interviews will be audio-recorded with participant consent.

APPENDIX D

ABUSE ASSESSMENT SCREEN

(Note: Adapted from the Abuse Assessment Screen [Soeken, McFarlane, Parker, & Lominack, 1998]; Any yes response indicates inclusion criteria for IPV experience is met.)

Researcher to potential participant: What is your current age? Age: _____
Researcher to potential participant: I am going to ask you a few questions about your past and current intimate relationship(s). That is, anyone you've ever dated or considered to be a partner (boyfriend/girlfriend, spouse, other) including anyone you are currently dating or consider to be a partner (boyfriend/girlfriend, spouse, other).

Have you ever been physically or emotionally abused by your partner or someone you've dated?

        Yes   No

Have you ever been hit, slapped, kicked, or otherwise physically hurt by your partner or someone you've dated?

        Yes   No

At any point in your life, have you experienced any of the following from your intimate partner:

Threats of abuse including use of a weapon	Yes	No
Slapping, pushing; no injuries and/or lasting pain	Yes	No
Punching, kicking, bruises, cuts and/or continuing pain	Yes	No
Beating up, severe contusions, burns, broken bones	Yes	No
Head injury, internal injury, permanent injury	Yes	No
Use of a weapon; wound from a weapon	Yes	No

At any point in your life, has anyone forced you to have sexual activities?

        Yes   No
Have you ever been afraid of your partner or someone you've dated?
        Yes   No

APPENDIX E

APPROVED IRB PROTOCOL

INSTRUCTIONS
Complete each section of the application keeping in mind that based on the nature of the research being proposed some sections may not apply. Those sections can be marked as N/A. As you complete this application, remember that the IRB is concerned with risks and benefits to the research participant and your responses should clearly reflect these issues, if any. You (the PI) need to retain the most recent protocol document for future revisions. Questions can be addressed to research.integrity@asu.edu. **PIs are strongly encouraged to complete this application with words and terms that someone not specialized in a specific field can comprehend.**

IRB: 1. Protocol Title**:** Study of the trajectories of Intimate Partner Violence over the life course among older adult women

IRB: 2.   Background and Objectives
    2.1 List the specific aims or research questions in 300 words or less.
    2.2 Refer to findings relevant to the risks and benefits to participants in the
        proposed research.
    2.3 Identify any past studies by ID number that are related to this study. If the
        work was done elsewhere, indicate the location.

TIPS for streamlining the review time:
✓ Two paragraphs or less is recommended.
✓ Do not submit sections of funded grants or similar. The IRB will request additional information, if needed.

2.1 The primary aim of this study is to examine the experience of Intimate Partner Violence (IPV) across the life course among older adult women. Identifying whether previous experiences of family violence increase the probability of IPV and identifying effective help-seeking behaviors that emerge over the life course are secondary aims of the study. Primary data collection will be conducted to answer the following research questions:

R1: What is the trajectory of IPV across the life course among older adult community-dwelling women in the Southwestern United States?

Secondary Aims:

R2: Do previous experiences of childhood trauma predict the trajectory of IPV among older adult community-dwelling women in the Southwestern United States in later life?

R3: What help-seeking behaviors are effective in preventing subsequent IPV experiences over the life course among older adult women in the Southwestern United States?

2.2 Currently, strategies and programming exist to prevent and address violence against women of younger ages (typically child-bearing ages). There are limited strategies and programming for older women (aged 60 and older) due to the lack of research completed examining IPV among this population. This project will utilize a life history calendar method to better understand how experiences of violence are interconnected over the life course. IPV is cyclical and recurrent in women's lives. Though researchers have pointed to various severe consequences of victimization, such as increased risk for mortality and poorer health, there is a lack of understanding about how risk of IPV changes over the life course. With most studies asking women about experiences of victimization within the last 12 months and incomplete hospital and police records, researchers are unable to achieve an accurate snapshot of victimization over the life course. Asking an older adult about her life experience of victimization will allow researchers to examine the complexities of the life cycle of abuse. For instance, some victims suffer victimization from the same partner over a long period of time, while others experience different types of violence from different partners over a long period of time. Research examining violence across the life course may provide a more accurate understanding of violence against women of all ages, and provide insight into the experience of IPV and effective help-seeking behaviors among older adult women.

2.3 N/A

IRB: **3. Data Use - What are the intended uses of the data generated from this project?**

Examples include: Dissertation, thesis, undergraduate project, publication/journal article, conferences/presentations, results released to agency, organization, employer, or school. If other, then describe.

Response:

The data from this project is intended to be used for the dissertation of Renee Garbe, Ph.D. student in the School of Social Work. The data from this project will be used to develop manuscripts for publication/journal articles. Data from the proposed study will also be developed into presentations for conferences.

The researcher will collect audio recordings of the semi-structured interviews for the purpose of obtaining qualitative data for future analysis. The semi-structured interview format will allow participants to provide their own definitions of violence based on their distinctive experiences throughout their life course that may not be captured in current structured interview tools. This information will be included in the Informed Consent document with the option to opt-in to recording.

IRB: **4.   Inclusion and Exclusion Criteria**

4.1 List criteria that define who will be included or excluded in your final sample.

Indicate if each of the following special populations is included or excluded:
- Minors (under 18)
- Adults who are unable to consent
- Prisoners
- Native Americans
- Undocumented individuals
- Non-English-speaking individuals.

4.2 If not obvious, what is the rationale for the exclusion of special populations?

4.3 What procedures will be used to determine inclusion/exclusion of special populations?

TIPS for streamlining the review time.
- ✓ Research involving only data analyses should only describe variables included in the dataset that will be used.
- ✓ For any research which includes or may likely include children/minors or adults unable to consent, review content at: https://researchintegrity.asu.edu/human-subjects/spec
- ✓ For research targeting Native Americans or populations with a high Native American demographic, or on or near tribal lands, review content at: https://public.azregents.edu/Policy%20Manual/1-118-Tribal%20Consultation.pdf
- ✓ For research involving minors on campus, review content at: https://cfo.asu.edu/minors-campus

Response:

4.1 Participants must meet the following inclusion criteria: aged 60 or older, female-identifying, experienced IPV at some point throughout the life course (does not need to be current), community-dwelling, English-speaking (fluent).

4.2 Adults who are unable to consent will be excluded from the study. The methodology employed for this research study has not been studied with adults with severe cognitive impairment, so it is not known if this methodology is appropriate for this population. The researcher does not speak any other language fluently; therefore, Non-English-speaking individuals will be excluded from the study.

4.3 The researcher will ask the participant to restate the study protocol in her own words to determine ability to consent.

IRB: **5.   Number of Participants**

Indicate the total number of individuals you expect to recruit and enroll. For secondary data analyses, the response should reflect the number of cases in the dataset.

Response:

5. The researcher aims to recruit and enroll 80 participants.

IRB: **6.   Recruitment Methods**

    6.1 Identify who will be doing the recruitment and consenting of participants.

    6.2 Identify when, where, and how potential participants will be identified, recruited, and consented.

    6.3 Name materials that will be used (e.g., recruitment script, assent)

    6.4 Describe the procedures relevant to using materials (e.g., consent form).

TIPS for streamlining the review time.

✓ Upload one attachment, dated, with all the materials relevant to this section. Name the document: recruitment_methods_dd-mm-yyyy

6.1 PhD candidate Renee Garbe will be completing recruitment and consenting of participants.

6.2 Participants will be recruited through community outreach. Flyers will be distributed at community events and centers and places of worship. The researcher will conduct outreach to staff at community-based organizations, informants, and stakeholders. Both IPV and agencies that serve older adults will be contacted to disseminate recruitment flyers. Additionally, advertisements will be placed in media outlets. To accommodate varying definitions of violence due to cohort differences and cultural norms and to also address the concern that women may not want to be identified as having experienced IPV in a public space, advertising will target all female-identifying older adults aged 60 or older (attached). The advertisement will state that the researcher is interested in intimate relationships over the life course. The researcher will determine if prospective participants meet inclusion criteria with a criterion tool (attached) completed over the phone or via email. The criterion tool will include questions adapted from the Abuse Assessment Screen (AAS), which is a reliable and valid clinical instrument that measures the frequency, severity, and perpetrator of abuse against women.

ResearchMatch.org will be utilized as a recruitment tool for this protocol. ResearchMatch.org is a national electronic, web-based recruitment tool that was created through the Clinical & Translational Science Awards Consortium in 2009 and is maintained at Vanderbilt University as an IRB-approved data repository (*see IRB #090207*).

6.3 Recruitment flyer (advertisement) is attached. Abuse Assessment Screen (name Criterion Tool) is attached. Recruitment initial contact email for ResearchMatch is attached.

6.4 Individuals who meet inclusion criteria over the phone or email will meet in-person or online via with the researcher to complete informed consent. The researcher will read aloud the informed consent document with the participant either in person or over Zoom. The researcher will ask the participant to repeat the purpose of the study in her own words prior to signing the consent form in person or over Zoom. For participants completing consent online, the researcher will provide a Qualtrics link to review the consent form online and require an electronic signature. This consent will be stored in Qualtrics.

IRB: **7. Procedures with Consented Participants**

    7.1 List every research procedure to be performed (e.g., interventions, surveys, focus groups, observations, lab procedures, secondary data collection, accessing student or other records for research purposes, and follow-ups).

    7.2 For each procedure listed, describe who will be enacting it, when it will be performed, how long is participation in each procedure, and how/what data will be collected in each procedure.

    7.3 Report the total period and span of time for the procedures (if applicable the timeline for follow ups).

    7.4 For secondary data analyses, identify if it is a public dataset (e.g., AdHeath). If not, describe the contents of the dataset, how it will be accessed, and attach data use agreement(s) if relevant.

TIPS for streamlining the review time.
- ✓ Ensure that research materials and procedures are explicitly connected to the articulated aims or research questions (from section 2 above).
- ✓ In some cases, a table enumerating the name of the measures, corresponding citation (if any), number of items, sources of data, time/wave if a repeated measures design can help the IRB streamline the review time.
- ✓ Upload one attachment, dated, with all the materials relevant to this section. Name the document: supporting documents dd-mm-yyyy

7.1 After confirming that the participant meets the inclusion criteria, the researcher will schedule an in-person interview time or online Zoom interview time. The researcher will complete informed consent procedures in-person or online via Zoom. The researcher will collect audio recordings of the semi-structured interviews for the purpose of obtaining qualitative data for future analysis. This information will be included in the Informed Consent document with the option to opt-in to the recording. If the participant consents to the recording, the researcher will start recording after the informed consent procedure is complete. If the participant does not opt-in to the recording, the interview will proceed after informed consent procedures without recording the interview. The researcher will complete a semi-structured interview utilizing the Life History Calendar (attached). A respondent booklet (attached) will be used to assist with data collection. After completion of the LHC, the interviewer will complete a short survey online via the Qualtrics survey tool or on paper (attached) that includes the Adverse Childhood Experience (ACE) questionnaire, A self-reported health questionnaire, the SF-20, and basic demographic information. After the completion of the interview, the researcher will provide resources for IPV and Elder Mistreatment to each respondent. The researcher will provide compensation for completion.

7.2 The study will be completed by PhD candidate Renee Garbe from the start of the project (February 2020) to study completion (80 participants enrolled). The above procedure (from informed consent through providing resources) will be completed with each participant within 60 to 90 minutes. The following data will be collected:

Life History Calendar: The LHC will have life events on the calendar's vertical axis and time units on the horizontal axis. The columns will be color coded to help the interviewer distinguish between columns to lessen risk of recording information in the incorrect column.
     The vertical axis of the LHC used in this study will include the following variables: *schooling, employment, children, residential moves, relationship, IPV events, help-seeking behavior*.
     The horizontal axis of the LHC used in this study will include the following variables: *respondent's age and corresponding calendar year*.
Please see Life History Calendar attachment and respondent booklet attachment for detailed response options.

The **BRFSS ACE** module is an 11-item self-report measure that asks about experience of eight types of childhood adversities.

The **SF-20** survey is a 20-item self-report measures that asks about current health and well-being.

The following demographic information will be collected: gender, age as of last birthday, race, ethnicity, years living in the United States, current employment, marital status, current household income, and whether depend on partner and/or caregiver's income for daily needs.

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Please see attached psychosocial survey for detailed response options for the BRFSS ACE, SF-20, and demographics.

7.3 The above procedure will be completed within 60 to 90 minutes. Follow-up N/A.

7.4 N/A

IRB: 8.   Compensation
 8.1 Report the amount and timing of any compensation or credit to participants.
 8.2 Identify the source of the funds to compensate participants.
 8.3 Justify that the compensation to participants to indicate it is reasonable and/or how the compensation amount was determined.
 8.4 Describe the procedures for distributing the compensation or assigning the credit to participants.

TIPS for streamlining the review time.
- ✓ If partial compensation or credit will be given or if completion of all elements is required, explain the rationale or a plan to avoid coercion
- ✓ For extra or course credit guidance, see "Research on educational programs or in classrooms" on the following page: https://researchintegrity.asu.edu/human-subjects/special-considerations.
- ✓ For compensation over $100.00, review "Research Subject Compensation at: https://researchintegrity.asu.edu/human-subjects/special-considerations for more information.

Response:
This research project is self-funded by the graduate student. Participants will receive a $20 gift card of their choice (VISA or retailer that provides electronic gift cards, such as Target) for these interviews in order to compensate time for survey. We believe this amount is appropriate and would not create coercion to participants who wouldn't otherwise participate. Participants will receive the gift card or e-gift card at the completion of the survey or via email at the completion of the survey.

IRB: 9.   Risk to Participants
   List the reasonably foreseeable risks, discomforts, or inconveniences related to participation in the research.

TIPS for streamlining the review time.
- ✓ Consider the broad definition of "minimal risk" as the probability and magnitude of harm or discomfort anticipated in the research that are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.
- ✓ Consider physical, psychological, social, legal, and economic risks.
- ✓ If there are risks, clearly describe the plan for mitigating the identified risks.

Response:
This study will collect sensitive information from study participants. Discussing the history of or current IPV events may cause some emotional discomfort. This researcher is a trained social worker and will provide emotional support and resources for the participant at the completion of the interview. Educational resources on IPV will be reviewed with the participants. Referrals to resources will be completed at the participant's request.

Fatigue may occur during the interview. The researcher will inform the individual that they can stop at any time. The researcher will state that the respondent is welcome to pause, take a break, or stop the survey anytime that the respondent feels uncomfortable. This researcher will do check-ins throughout the data collection process to prevent the participant from feeling as if they cannot interrupt the researcher. Respondents will still receive compensation for the survey even if the respondent wishes not to continue.

Online data collection may be disrupted of transmission by technology failures as well as interruption and/or breaches of confidentiality by unauthorized persons. This researcher will provide a Zoom link from the researcher's ASU Zoom account with a specific password for that meeting. Additionally, the researcher will use the waiting room feature on Zoom so that any unauthorized persons would not have access into the room.

IRB: 10. Potential Benefits to Participants
List the potential benefits that individuals participating in the proposed study will experience from taking part in the research. If there are risks noted in 9 (above), articulated benefits should outweigh such risks. These benefits are not to society or others not considered participants in the proposed research. Indicate if there is no direct benefit. Do not included compensation as a benefit.

Response:
There will be no direct benefit to individuals participating in the proposed study. However, focus groups of older adult women with history of or current IPV experiences have stated the opportunity to tell their story has provided psychological benefit, such as positive feelings regarding their resiliency. Some participants may feel gratitude for having someone hear their story.

IRB: **11. Privacy and Confidentiality**
    Indicate the steps that will be taken to protect the participant's privacy.

11.1 Identify who will have access to the data.
11.2 Identify where, how, and how long data will be stored (e.g. ASU secure server, ASU cloud storage,
     filing cabinets).
11.3 Describe the procedures for storing, de-identifying, and destroying data.
11.4 Describe any special measures to protect any extremely sensitive data (e.g.
     password protection, encryption, certificates of confidentiality, separation of
     identifiers and data, secured storage, etc.).
11.5 Describe how any audio or video recordings will be managed, secured,
     and/or de-identified.
11.6 Describe how will any signed consent, assent, and/or parental permission
     forms be secured and how long they will be maintained. These forms should
     separate from the rest of the study data.
11.7 Describe how any data will be linked or tracked (e.g. master-list, contact list,
     reproducible participant ID, randomized ID, etc.). Outline the specific
     procedures and processes that will be followed.
11.8 Describe any and all identifying or contact information that will be collected
     for any reason during the course of the study and how it will be secured or
     protected. This includes contact information collected for follow-up,
     compensation, linking data, or recruitment.
11.9 For studies accessing existing data sets, clearly describe whether or not the
     data requires a Data Use Agreement or any other contracts/agreements to
     access it for research purposes.
11.10 For any data that may be covered under FERPA (student grades, etc.)
     additional information and requirements is available at
     https://researchintegrity.asu.edu/human-subjects/special-considerations.

11.1 The PhD candidate, Renee Garbe, and the three members of the dissertation committee will have access to the data. These members are Principal Investigator Dr. Katie Stalker, Dr. Hyunsung Oh, and Dr. Jill Messing. All individuals are employed by Arizona State University.

11.2 De-identified data will be stored in password protected files in ASU cloud storage (Dropbox) for as long as active data analysis continues under monitoring by the ASU IRB.

11.3 For participant privacy, questionnaires will be kept in a locked file cabinet. Online Qualtrics survey data and consent forms will be downloaded into a data file that will be password protected and stored in ASU cloud storage (Dropbox). After the Life History Calendar data is entered into the researcher's computer in password protected files and double-checked for error, the questionnaires will be destroyed. Recordings and data from interviews will be stored in password protected files in ASU cloud storage (Dropbox) to keep information safe from people who are not part of the project team. Consent forms will be stored in a locked file cabinet or downloaded into ASU cloud storage (Dropbox) in a password-protected folder separate from the rest of the study data.

11.4 Data files will not include any identifying information and will be password protected in secured ASU cloud storage (Dropbox). Consent forms will be stored in a locked file cabinet or downloaded into ASU cloud storage (Dropbox) in a password-protected folder separate from the rest of the study data.

11.5 Audio recordings will not have identifying information, only study ID number. Audio recordings will be saved in password protected files in secure ASU cloud storage (Dropbox).

11.6 Consent forms will be stored in a locked file cabinet separate from the rest of the study data. Consent forms from Qualtrics will be downloaded into ASU cloud storage (Dropbox) in a password-protected folder separate from the rest of the study data.

11.7 Data documents will be coded with a participant ID. No master list will be recorded given that this study does not involve follow-up with participants. Data will be linked by participant ID number on the interview tools and online Qualtrics survey.

11.8 Potential participants will contact the researcher during the recruitment process. First name, phone number and/or email will be collected to send a reminder of date and time of participation. After completion of the interview, this information will be destroyed. Data will be linked by participant ID number on the interview tools and online Qualtrics survey. Compensation will be recorded on a compensation log with the participants printed name and signature. This will be kept in a locked file cabinet separate from participant data.

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11.9 N/A

11.10 N/A

IRB: 12. Consent
Describe the procedures that will be used to obtain consent or assent (and/or parental permission).

12.1 Who will be responsible for consenting participants?
12.2 Where will the consent process take place?
12.3 How will the consent be obtained (e.g., verbal, digital signature)?

TIPS for streamlining the review time.
- ✓ If participants who do not speak English will be enrolled, describe the process to ensure that the oral and/or written information provided to those participants will be in their preferred language. Indicate the language that will be used by those obtaining consent. For translation requirements, see Translating documents and materials under https://researchintegrity.asu.edu/human-subjects/protocol-submission
- ✓ Translated consent forms should be submitted after the English is version of all relevant materials are approved. Alternatively, submit translation certification letter.
- ✓ **If a waiver** for **the informed consent process is requested**, **justify the waiver** in terms of **each of the following**: (a**) The research involves no more than minimal risk to the subjects; (b**) The waiver or alteration will not adversely affect the rights and welfare of the subjects; (c**) The research could not practicably be carried out without the waiver or alteration; and** (d) Whenever appropriate, the subjects will be provided with additional pertinent information after participation. Studies involving confidential, one time, or anonymous data need not justify a waiver. A verbal consent or implied consent after reading a cover letter is sufficient.
- ✓ ASU consent templates: https://researchintegrity.asu.edu/human-subjects/forms are encouraged.
- ✓ Consents and related materials need to be congruent with the content of the application.

Response:
12.1 PhD candidate Renee Garbe will be responsible for consenting participants.

12.2 The consent process will take place in a reserved, private room with participants when meeting in-person or a private, password-protected Zoom meeting space when meeting online.

12.3 Consent will be obtained with patient's signature on paper form or by electronic signature for consent via Qualtrics online.

IRB: **13. Human Subjects Certification from Training.**

Provide the names of the members of the research team.

ASU affiliated individuals do not need attach Certificates. Non-ASU investigators and research team members anticipated to manage data and/or interact with participants, need to provide the most recent CITI training for human participants. Certificates are valid for 4 years.

TIPS for streamlining the review time.
✓ If any of the study team members have not completed training through ASU's CITI training (i.e. they completed training at another university), copies of their completion reports will need to be uploaded when you submit.
✓ For any team members who are affiliated with another institution, please see "Collaborating with other institutions" under https://researchintegrity.asu.edu/human-subjects/special-considerations.
✓ The IRB will verify that team members have completed IRB training. Visit https://researchintegrity.asu.edu/human-subjects/training for details on how to complete IRB CITI training through ASU.

Response:
Renee Garbe, Phd Candidate
Dr. Katie Stalker
Dr. Hyunsung Oh
Dr. Jill Messing

All are ASU affiliated individuals.

General Tips:
- Ensure that all your instruments, recruitment materials, study instruments, and consent forms are submitted via ERA when you submit your protocol document. For templates recommended, see https://researchintegrity.asu.edu/human-subjects/forms
- Submit a complete protocol. Don't ask questions in the protocol – submit with your best option and, if not appropriate, revisions will be requested.
- If your study has undeveloped phases, clearly indicate in the protocol document that the details and materials for those phases will be submitted via a modification when ready.
- Review all materials for consistency. Ensure that the procedures, lengths of participation, dates, etc., are consistent across all the materials you submit for review.
- Have all members of the research team complete IRB training before submitting.
- Only ASU faculty, full time staff may serve as the PI. Students may prepare the submission by listing the faculty member as the PI. The submit button will only be visible to the PI.
- For information on how and what to submit with your study in ERA, see https://researchintegrity.asu.edu/human-subjects/protocol-submission. Note that if you are a student, you will need to have your Principal Investigator submit.
- For details on how to submit this document as part of a study for review and approval by the ASU IRB, visit https://researchintegrity.asu.edu/human-subjects/protocol-submission.

APPENDIX F

INFORMED CONSENT

Consent Form: Social Behavioral

Title of research study: **Intimate Partner Violence over the Life Course**

Investigator: Renee Garbe, LMSW, under the direction of Dr. Katie Stalker, Assistant Professor, School of Social Work of the Watts College of Public Service and Community Solutions at Arizona State University

Why am I being invited to take part in a research study?

We invite you to take part in a research study because you are 60 years of age or older, female- identifying, and indicated you have experienced at least one event of intimate partner violence (IPV) over your life course.

Why is this research being done?

There are limited strategies and programming for women aged 60 and older due to the lack of research completed examining IPV among this population. This project will utilize a life history calendar to better understand how experiences of violence are interconnected over the life course. Research examining violence across the life course may provide a more accurate understanding of violence against women of all ages, and provide insight into the experience of IPV and effective help-seeking behaviors among women aged 60 and older.

How long will the research last?

We expect that individuals will spend between 60 and 90 minutes answering the interview questions and completing the survey.

How many people will be studied?

We expect about 80 people will participate in this research study.
What happens if I say yes, I want to be in this research?

You will be asked to fill out a survey and answer interview questions. During the interview, you will be asked about schooling, employment, residential moves, children, and your relationships using a calendar to mark these events. You will also be asked about times during relationships when you felt afraid or experienced harm, and what help you may have sought during that time. The survey asks about early childhood adversities, current health and wellbeing, and demographic information. The interview and survey will take between 60 and 90 minutes to complete and all responses are confidential. You have the right not to answer any question, and to stop participation at any time.

I would like to audio record this interview. The interview will not be recorded without your permission. If you give me permission to record the interview, please check the box

below your signature. You also can change your mind after the interview starts, just let me know.

After answering the questions, you will be provided with a $20 gift card or e-gift card to the merchant of your choice.

What happens if I say yes, but I change my mind later?

You can leave the research at any time it will not be held against you.

Is there any way being in this study could be bad for me?

You may feel emotional discomfort or fatigue while participating in the survey. At any time, you are welcome to pause or stop the survey. You can take breaks and use as much time as you need to complete the interview questions and survey. Some of the questions may be a bit uncomfortable; you are welcome to skip any questions that make you uncomfortable. We will not share your responses with anyone at ASU who are not part of the study team. If meeting online, there may be a disruption of transmission by technology failures or possibly interruption and/or breaches of confidentiality by unauthorized persons. You will be provided with a password-protected Zoom meeting link and will be allowed into the waiting room by the researcher.

Will being in this study help me in any way?

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include the future development of more effective helping strategies and interventions for older adult women experiencing harm in their relationships.

What happens to the information collected for the research?

The information will be used to learn more about IPV and adversity over the life course and how this affects help-seeking and wellbeing among older adult women. The results of this study may be used in reports, presentations or publications but your name will not be used. Efforts will be made to limit the use and disclosure of your personal information, including research study records, to people who have a need to review this information. We cannot promise complete secrecy. The questionnaires are kept confidential by storing them in a locked file cabinet while awaiting computer entry for analysis; once data is entered into the computer and double-checked for errors, the questionnaires will be destroyed. The audio recordings will be stored in password-protected system in ASU secure cloud storage. Computer storage involves a secure password-protected system to keep the information safe from people who are not part of the research team. Remember that your name is not included on the questionnaires.

Who can I talk to?

If you have questions, concerns, or complaints, feel free to reach out to Renee Garbe at (520) 261-7657 or Principal Investigator Katie Cotter Stalker at (520) 884-5507.

This research has been reviewed and approved by the Social Behavioral IRB. You may talk to them at (480) 965-6788 or by email at research.integrity@asu.edu if:

- Your questions, concerns, or complaints are not being answered by the research team.

- You cannot reach the research team.

- You want to talk to someone besides the research team.

- You have questions about your rights as a research participant.

- You want to get information or provide input about this research.

Signature Block for Capable Adult

Your signature documents your permission to take part in this research.

Signature of participant:

Date:

Printed name of participant:

Signature of person obtaining consent :

Date:

Printed name of person obtaining consent:

   YES, I agree to audio recording this interview.

APPENDIX G

LIFE HISTORY CALENDAR TEMPLATE

YEAR											
AGE	16	17	18	19	20	21	22	23	24	…	65
Residential Move											
Schooling											
Work											
Children											
Relationship – Partner Initials											
[C, M, S, D, AN, W, AB, AW]											
Physical event(s)											
Emotional event(s)											
Sexual event(s)											
Other											
Frequency											
Help-Seeking											
Talked to anyone about incident(s)?											
Contact or use any services for help?											
AGE											

APPENDIX H

QUALTRICS SURVEY WITH PSYCHOSOCIAL MEASURES

Instructions: Renee Garbe, LMSW, doctoral student at Arizona State University's (ASU) School of Social Work, would like to invite you to participate in a confidential research study. Contact information will NOT be collected. This survey will take between 15 and 30 minutes to complete. The survey will ask about your physical health and wellbeing, as well as questions about events that happened during your childhood.

Now I'd like to ask you questions about your general health and wellbeing. Please choose one option for each item. *[Researcher's note: This is RAND Corporation's Short Form Health Survey (SF-20; Hays, Sherbourne, & Mazel, 1995)]*

In general, would you say your health is:

      i. Excellent
     ii. Very good
    iii. Good
    iv. Fair
     v. Poor

For how long (if at all) has your **health limited you** in **each** of the following activities?

	Limited for more than 3 months	Limited for 3 months or less	Not limited at all
The kinds or amounts of vigorous activities you can do, like lifting heavy objects, running, or participating in strenuous sports	O	O	O
The kinds or amounts of moderate activities you can do, like moving a table, carrying groceries, or bowling	O	O	O
Walking uphill or climbing a few flights of stairs	O	O	O
Bending, lifting, or stooping	O	O	O
Walking one block	O	O	O
Eating, dressing, bathing, or using the toilet	O	O	O

How much **bodily pain** have you had **during the past 4 weeks:**

       i. None
      ii. Very mild
    iii. Mild
    iv. Moderate
      v. Severe
    vi. Very Severe

Does your health keep you from working at a job, doing work around the house, or going to school?

       i. Yes, for more than 3 months
      ii. Yes, for 3 months or less
    iii. No

Have you been unable to do **certain kinds or amounts** of work, housework, or schoolwork because of your health?

       i. Yes, for more than 3 months
      ii. Yes, for 3 months or less
    iii. No

For **each** of the following questions, please mark the **one** answer that comes **closest** to the way you have been feeling **during the past month.**

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
How much of the time, during the past month, has your health limited your social activities (like visiting with friends or close relatives)?	○	○	○	○	○	○
How much of the time, during the past month, have you been a very nervous person?	○	○	○	○	○	○
During the past month, how much of the time have you felt calm and peaceful?	○	○	○	○	○	○
How much of the time, during the past month, have you felt downhearted and blue?	○	○	○	○	○	○
During the past month, how much of the time have you been a happy person?	○	○	○	○	○	○
How often, during the past month, have you felt so down in the dumps that nothing could cheer you up?	○	○	○	○	○	○

Please mark the response that **best** describes whether **each** of the following statements is **true** or **false** for you.

	Definitely True	Mostly True	Not sure	Mostly False	Definitely False
I am somewhat ill	O	O	O	O	O
I am as healthy as anybody I know	O	O	O	O	O
My health is excellent	O	O	O	O	O
I have been feeling bad lately	O	O	O	O	O

I'd like to ask you some questions about events that happened during your childhood. This information will allow researchers to better understand problems that may occur early in life, and may help others in the future. This is a sensitive topic and some people may feel uncomfortable with these questions. Please keep in mind that you can ask me to skip any question you do not want to answer. All questions refer to the time period **before you were 18 years of age.** Now, looking back before you were 18 years old... *[Researcher's note: This is the Adverse Childhood Experiences Survey (ACES; CDC, 2020)]*

	Yes	No	Not sure	Did not answer
Ddi you live with anyone who was depressed, had a mental illness, or was suicidal?	O	O	O	O
Did you live with anyone who had problems with drinking or was an alcoholic?	O	O	O	O
Did you live with anyone who used illegal street drugs or who abused prescription medications?	O	O	O	O
Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?	O	O	O	O

Before you were 18 years old…

	Yes	No	Parents never married	Not sure	Did not answer
Were your parents separated or divorced?	O	O	O	O	O

Before you were 18 years old...

	Never	Once	More than once	Not sure	Did not answer
How often did your parents or adults in your home ever slap, hit, kick, punch, or beat each other up?	O	O	O	O	O
How often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking. Would you say -	O	O	O	O	O
How often did a parent or adult in your home ever swear at you, insult you, or put you down?	O	O	O	O	O
How often did anyone at least 5 years older than you or an adult, ever touch you sexually?	O	O	O	O	O
How often did anyone at least 5 years older than you or an adult, try to make you touch sexually?	O	O	O	O	O
How often did anyone at least 5 years older than you or an adult, for you to have sex?	O	O	O	O	O

Finally, I'd like to ask you some basic demographic questions.

What is your gender?

      i.   Cis
     ii. Trans

What is your age?

Were you born in the United States?

      i.   Yes
     ii. No

[If no to above] For how many years have you lived in the United States?

What is your race? You can select more than one.

       i.   Native Hawaiian or other Pacific Islander
      ii. American Indian or Alaska Native
    iii. Asian
    iv. African-American/Black
     v. Caucasian/White

Are you Hispanic or Latino/a?

      i.   Yes
     ii. No

What is your current employment status?

       i.   Work full-time
      ii. Work part-time
    iii. Full-time homemaker/caregiver
    iv. Retired
     v. Unable to work
    vi. Unemployed and currently working for work

What is your marital status?

    i. Single/Never married
    ii. Married, or in a domestic partnership
    iii. Widowed
    iv. Divorced
    v. Separated

What is your current household income?

    i. Not sure
    ii. Less than $20,000
    iii. $20,000 to $34,999
    iv. $35,000 to $49,999
    v. $50,000 to $74,999
    vi. $75,000 to $99,999
    vii. Over $100,000

Do you depend on your partner or caregiver's income to meet daily needs?

    i. Yes
    ii. No
    iii. Not Applicable

You have now completed the survey. The researcher will now discuss available supportive services in case they are needed now or in the future. Thank you for your time!

APPENDIX I

RESPONDENT BOOKLET

First, we are going to complete a Life History Calendar. I would like to ask you about some of the important things you have been doing since you were 16. To help record this information, I am going to use this calendar.

As you can see, we have the years going across the top. They begin the year you turned 16 and extend to the present.

For those years, I will be asking you about the things listed along the side here-where you lived, any children you may have had, schools you may have attended, and when you were employed.

Residential moves

Let's begin by talking about where you lived during those years. In what city and state were you living when you turned 16?

Until what month and year did you live there?

Where did you live next?

Schooling

Now let's talk about schools you may have attended during these same years.

What school were you attending when you turned 16?
Until what year did you attend that school?

Did you attend any other schools after this time period?

Please tell which years you attended each school.

Some school examples:
- **High School/Completed GED**
- **Community College/Associates Degree**
- **Trade School**
- **4-year College or University**
- **Graduate or Professional School**

Employment

Now let's talk about places you may have worked during these same years.

What type of employment did you have when you turned 16?

Until what year were you employed there?

Did you work part-time or full-time?

Where did you work next?

Children

Now let's talk about any children you may have had during these same years.

Have you given birth and/or adopted children? If yes…

In what year was your first child born/adopted?

In what year was your second child born/adopted?

In what year was your third child born/adopted?

Please continue until all children are included in the calendar.

Relationships

Now let's talk about intimate partnerships you may have had during these same years.

When did you have your first intimate relationship?

(If applicable) When did this relationship end?

(If applicable) When was your next intimate relationship?

(If applicable) When did this relationship end?

Are there any time periods when you were generally dating but not involved with any one person in particular?

Please continue until all intimate relationships are included in the calendar.

Experiences with mistreatment

At what age did you experience mistreatment for the first time? Please see some examples below.

- **Was shouted at or yelled at by my partner**
- **Was insulted or shamed by my partner**
- **Had a bruise, sprain, or felt pain after a fight with my partner**
- **Was pushed, shoved, or slapped by my partner**
- **Was punched, kicked or dragged by my partner**
- **Felt threatened by my partner**
- **Was under surveillance or had activity restricted by my partner**
- **Partner pressured, or coerced me to have sex**
- **Partner used force to make me have sex**
- **Partner refused contraception**

Did you experience mistreatment in other years? Were you ever afraid of any partners?

Sources of Help

Other than to the police, did you ever talk to anything about (these) incident(s)? Such as…

1 – family member
2 – a friend or a neighbor
3 – a coworker
4 – a minister, priest, clergy, or other spiritual advisor

Did you find these sources to be helpful? What was the outcome?

Did you contact or use any of the following services for help because of the violence? Such as…
1 – reported to the police
2 – talked about the incident(s) to a doctor or nurse
3 – talked about the incident(s) to a lawyer
4 – contacted a crisis center or crisis line
5 – contacted another counselor, psychologist or social worker
6 – contacted a community center or family center
7 - contacted a shelter or transitional home
8 – contacted a women's center
9 – contacted court-based services

Did you find these sources to be helpful? What was the outcome?

APPENDIX J

MODEL DIAGNOSTICS: NORMAL DISTRIBUTION OF RANDOM EFFECTS

Figure J1

Model 1 Normal Distribution Random Effects Q-Q Plot
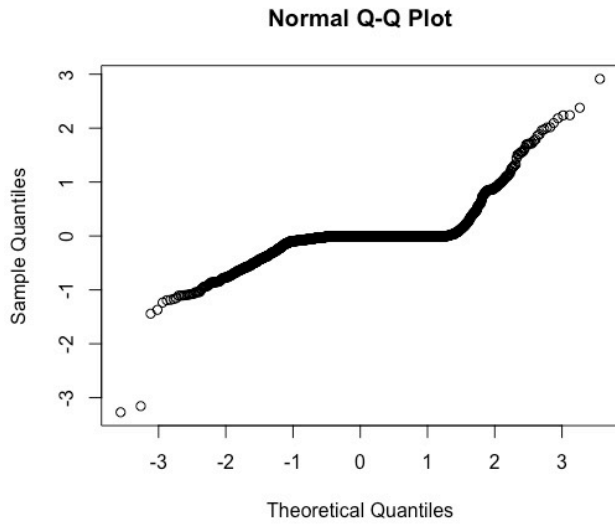
Normal Q-Q Plot

Figure J2

Model 2 Normal Distribution Random Effects Q-Q Plot
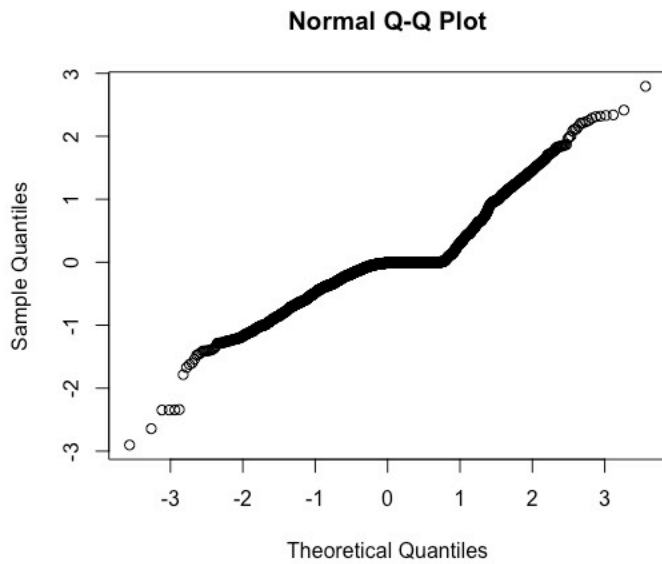
Normal Q-Q Plot

Figure J3

Model 3 Normal Distribution Random Effects Q-Q Plot
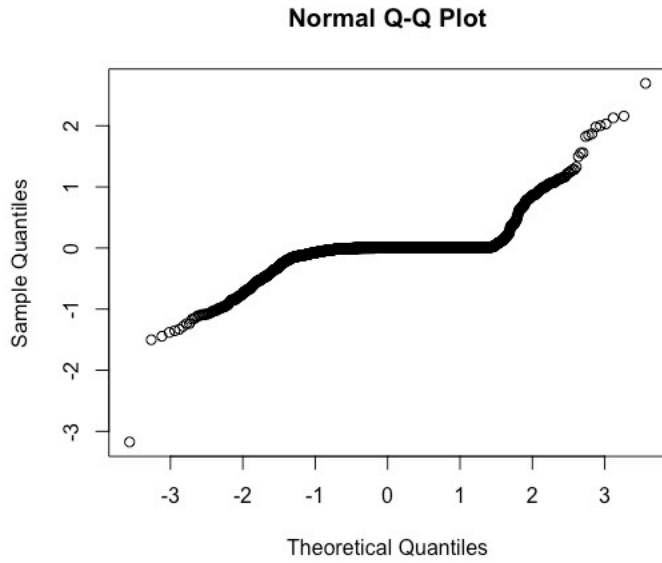
Normal Q-Q Plot

Figure J4

Model 4 Normal Distribution Random Effects Q-Q Plot
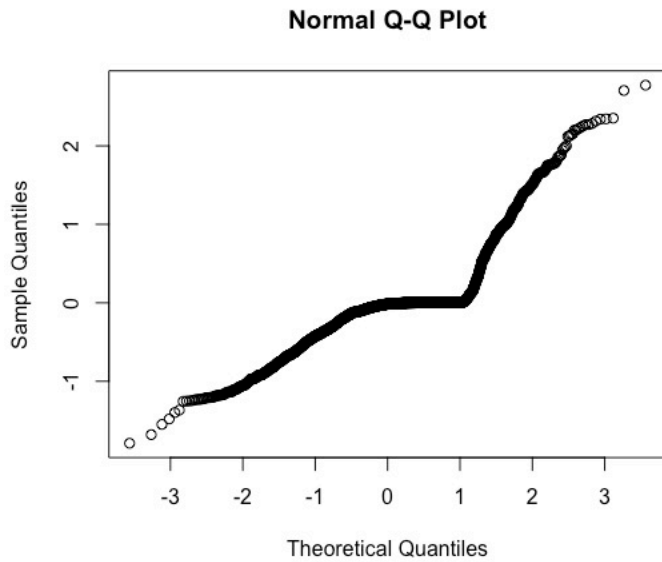
Normal Q-Q Plot

Figure J5

Model 5 Normal Distribution Random Effects Q-Q Plot
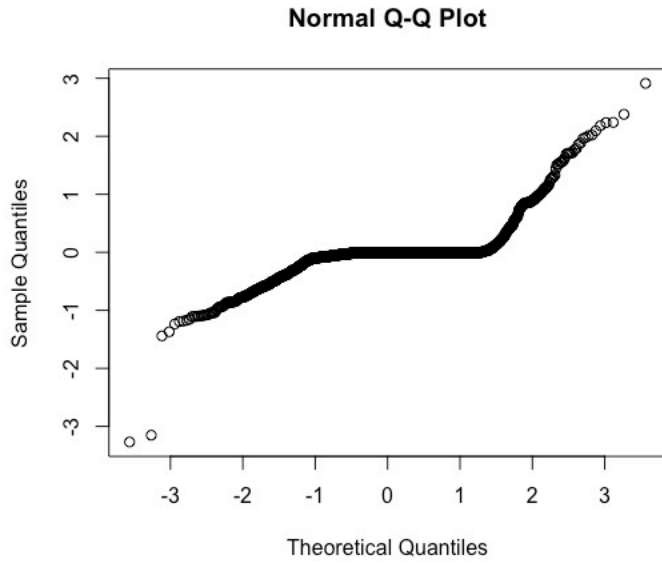
Normal Q-Q Plot

Figure J6

Model 6 Normal Distribution Random Effects Q-Q Plot
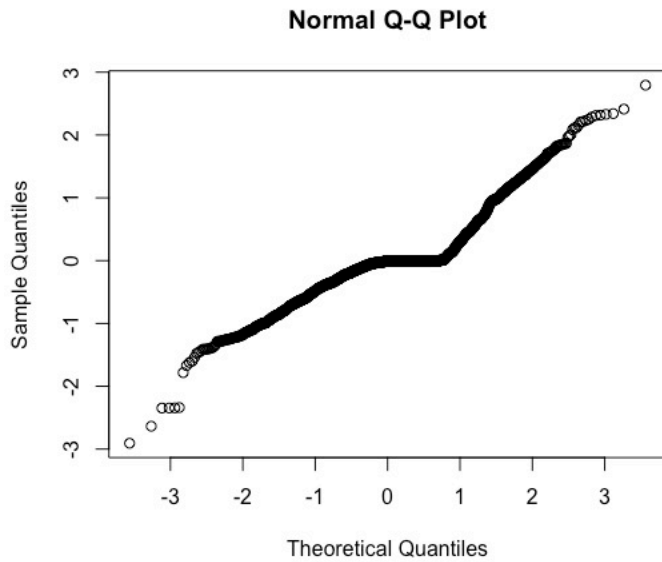
Normal Q-Q Plot

Figure J7

Model 7 Normal Distribution Random Effects Q-Q Plot
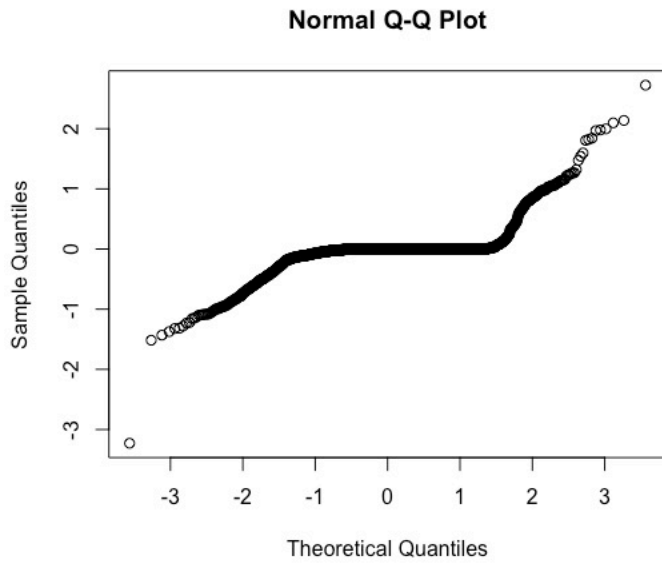
Normal Q-Q Plot

Figure J8

Model 8 Normal Distribution Random Effects Q-Q Plot
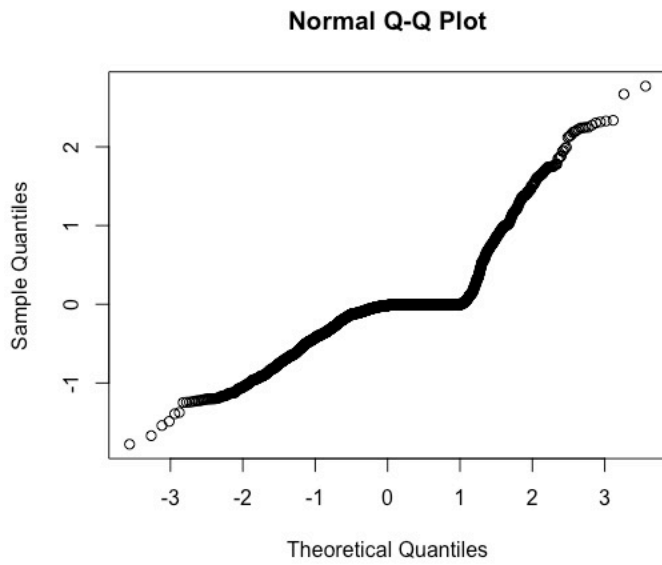
Normal Q-Q Plot

Figure J9

Model 9 Normal Distribution Random Effects Q-Q Plot

Normal Q-Q Plot
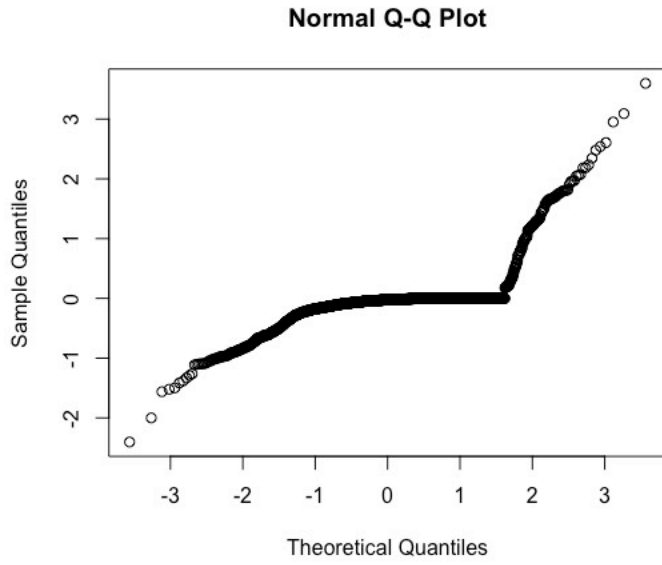
APPENDIX K

MODEL DIAGNOSTICS: LINK FUNCTION

Figure K1

.
Model 1 Outcomes vs Predicted Values
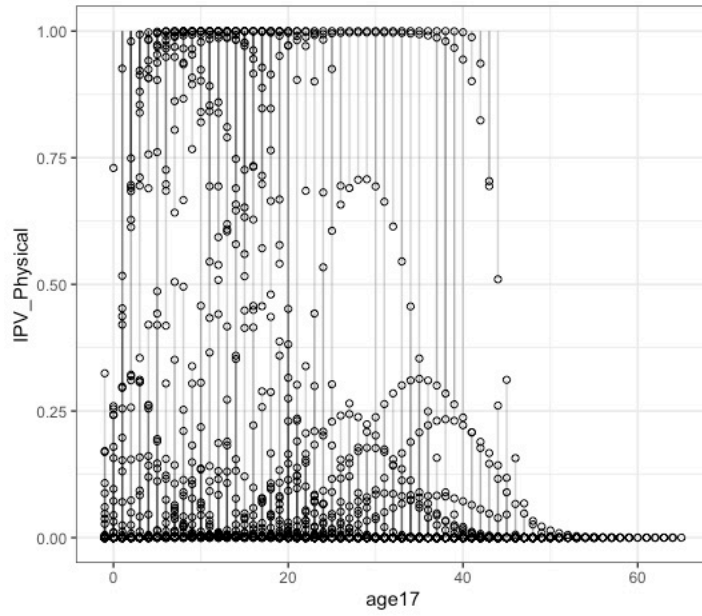
Figure K2

Model 2 Outcomes vs Predicted Values
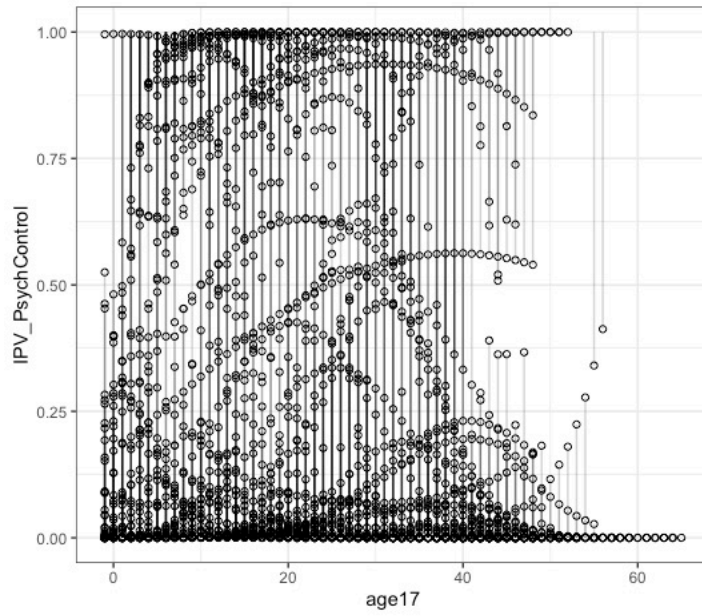
Figure K3

Model 3 Outcomes vs Predicted Values
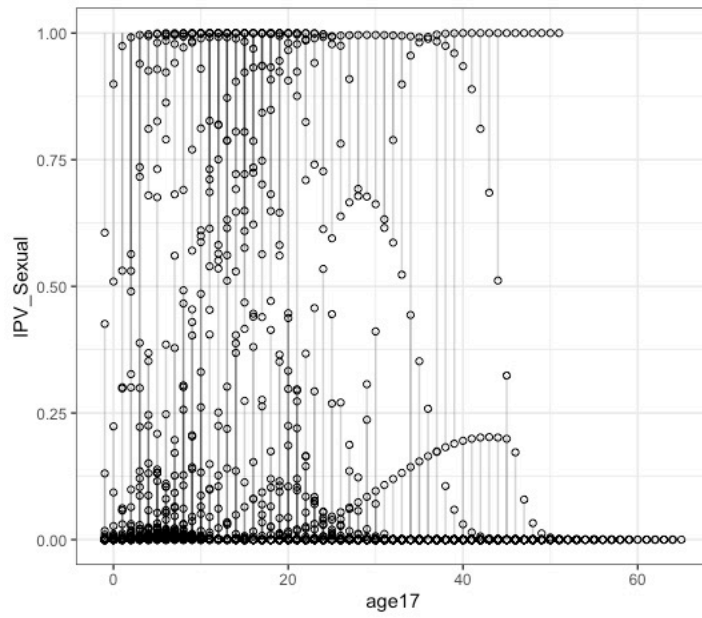
Figure K4

Model 4 Outcomes vs Predicted Values
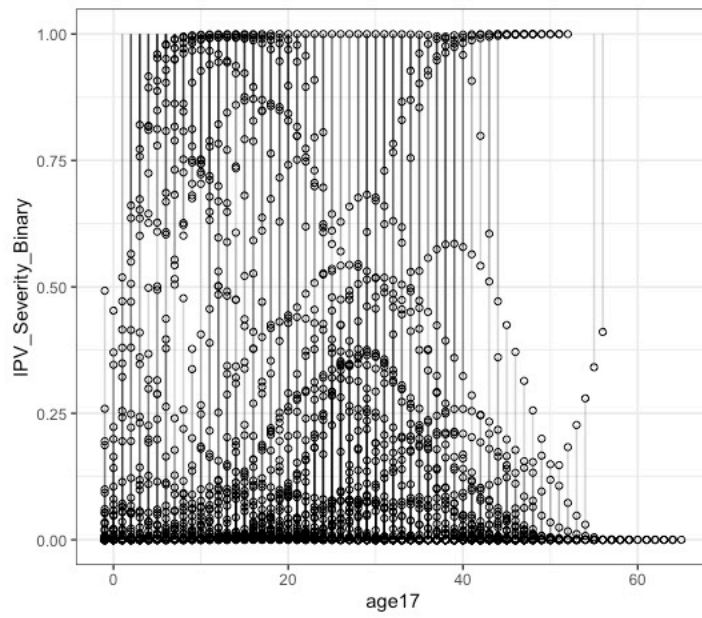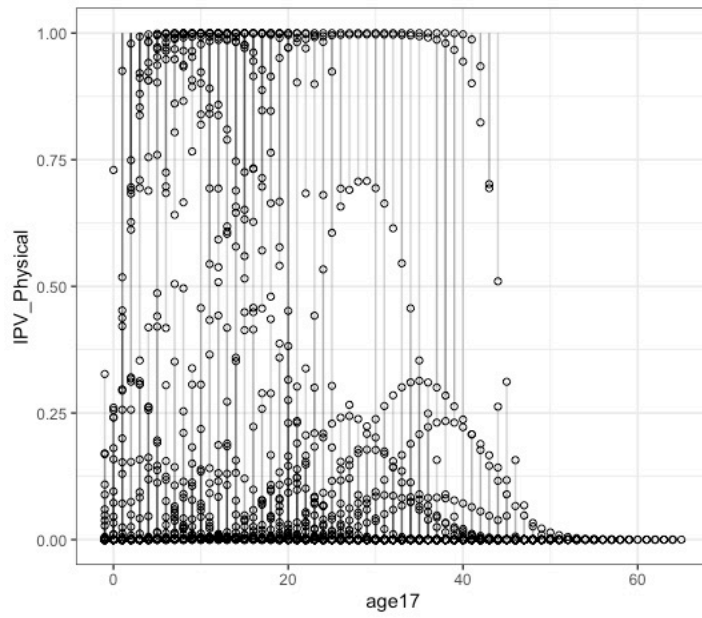
Figure K5

Model 5 Outcomes vs Predicted Values
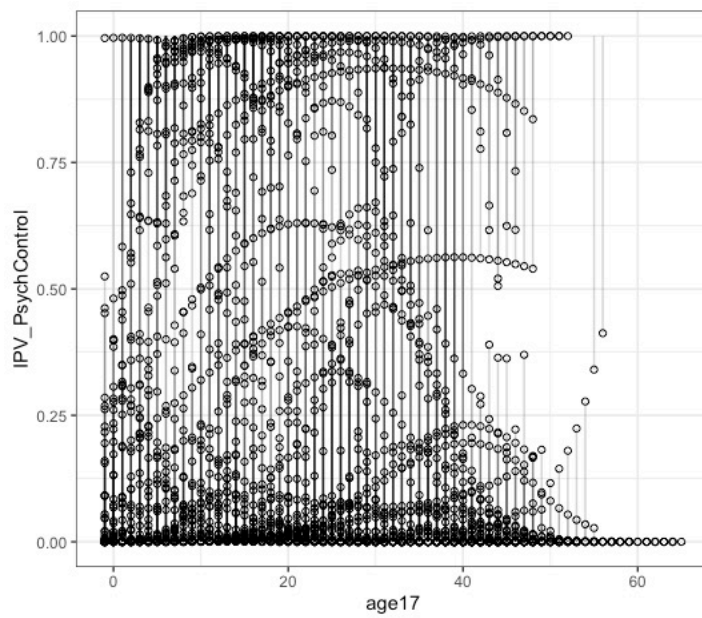

Figure K6

Model 6 Outcomes vs Predicted Values

Figure K7

Model 7 Outcomes vs Predicted Values
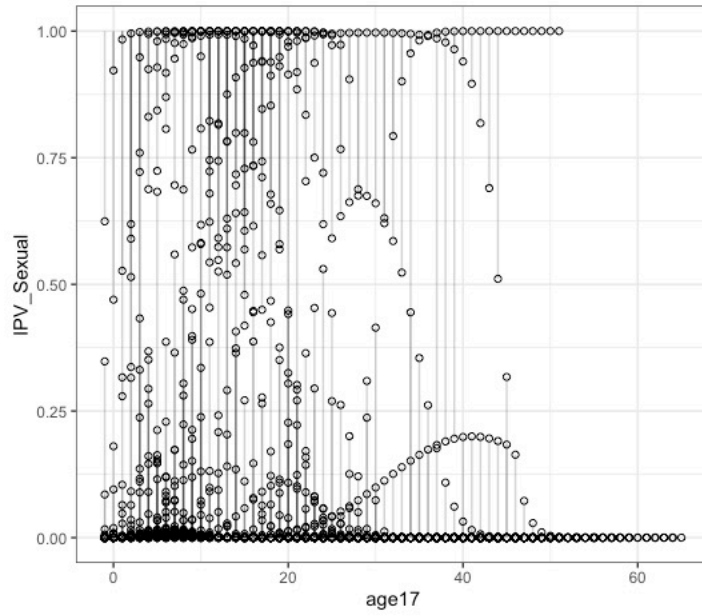

Figure K8

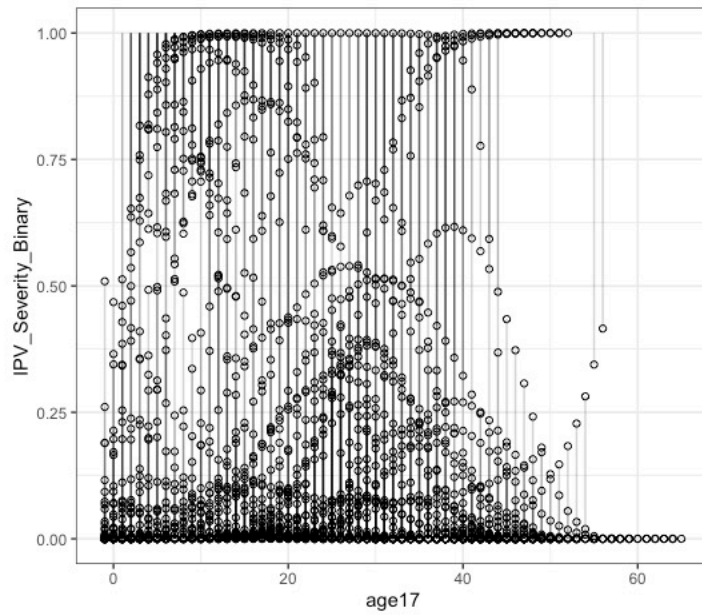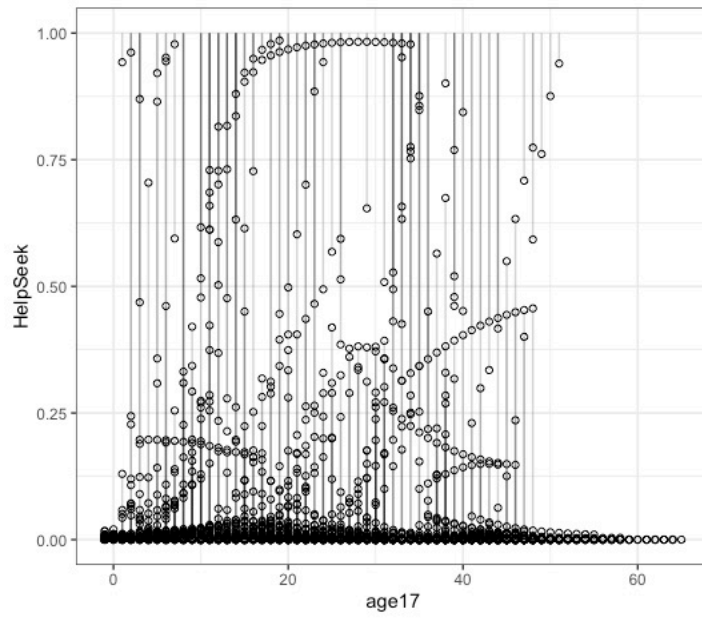*Model 8 Outcomes vs Predicted Values*

Figure K9

Model 9 Outcomes vs Predicted Values

APPENDIX L

MODEL DIAGNOSTICS: OVERDISPERSION

Appropriate Estimation of the Variances, by Model

Model	Dispersion
Model 1: Physical IPV	0.37
Model 2: Psychological IPV	0.61
Model 3: Sexual IPV	0.32
Model 4: High Frequency IPV	0.55
Model 5: Physical IPV with ACES	0.37
Model 6: Psychological IPV with ACES	0.61
Model 7: Sexual IPV with ACES	0.32
Model 8: High Frequency IPV with ACES	0.55
Model 9: IPV-related Help-seeking	0.39

Note: Assumption violated when dispersion value is greater than 1.4.

APPENDIX M

MODEL DIAGNOSTICS: POWER ANALYSIS

Power Analysis by Model

Model	Power (%)
Model 1: Physical IPV	98.08
Model 2: Psychological IPV	86.54
Model 3: Sexual IPV	100.00
Model 4: High Frequency IPV	94.23
Model 5: Physical IPV with ACES	100.00
Model 6: Psychological IPV with ACES	98.08
Model 7: Sexual IPV with ACES	100.00
Model 8: High Frequency IPV with ACES	88.40
Model 9: IPV-related Help-seeking	93.15

Note: Power calculated using PowerSim function in package simr: power analysis for generalized linear mixed models by simulation in R version

APPENDIX N

FULL MODEL EQUATIONS

Equation N1

Models 1 through 4 Reduced Form Full Model Equation

$y_{ij} = \text{Binomial}(\mu_{ij})$

$\log(y_{ij}) = \beta_{00} + \beta_{10}\text{Age}_{ij} + \beta_{01}\text{AgeAtInterview}_j + \beta_{20}\text{Age}^2_{ij} + \beta_{11}\text{AgeAtInterview}_j*\text{Age}_{ij}$

$\qquad\qquad + \mu_{0j} + \mu_{1j}\text{Age}_{ij} + \mu_{2j}\text{Age}^2_{ij}$

$\mu_{0j} \sim \text{normal}(0, \sigma^2_{00})$

Equation N2

Models 5 through 8 Reduced Form Full Model Equation

$y_{ij} = \text{Binomial}(\mu_{ij})$

$\log(y_{ij}) = \beta_{00} + \beta_{10}\text{Age}_{ij} + \beta_{01}\text{AgeAtInterview}_j + \beta_{20}\text{Age}^2_{ij} + \beta_{11}\text{AgeAtInterview}_j*\text{Age}_{ij}$

$\qquad\qquad + \beta_{21}\text{ACES}_j + \mu_{0j} + \mu_{1j}\text{Age}_{ij} + \mu_{2j}\text{Age}^2_{ij}$

$\mu_{0j} \sim \text{normal}(0, \sigma^2_{00})$

Equation N3

Model 9 Reduced Form Full Model Equation

$y_{ij} = \text{Binomial}(\mu_{ij})$

$\log(y_{ij}) = \beta_{00} + \beta_{10}\text{Age}_{ij} + \beta_{01}\text{AgeAtInterview}_j + \beta_{20}\text{Age}^2_{ij} + \beta_{11}\text{AgeAtInterview}_j*\text{Age}_{ij}$

$\qquad\qquad + \beta_{30}\text{PhysicalIPVContemporaneous}_{ij} + \beta_{40}\text{PhysicalIPVCumulative}_{ij}$

$\qquad\qquad + \beta_{50}\text{PsychIPVContemporaneous}_{ij} + \beta_{60}\text{PsychIPVCumulative}_{ij}$

$\qquad\qquad + \beta_{70}\text{SexualIPVContemporaneous}_{ij} + \beta_{80}\text{SexualIPVCumulative}_{ij}$

$\qquad\qquad + \beta_{90}\text{HighFrequencyIPVContemporaneous}_{ij} + \mu_{0j} + \mu_{1j}\text{Age}_{ij} + \mu_{2j}\text{Age}^2_{ij}$

$\mu_{0j} \sim \text{normal}(0, \sigma^2_{00})$