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Patient Violence and Aggression in Non-Institutional Health Care Settings: Predictors of Reporting By Healthcare Providers

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PATIENT VIOLENCE AND AGGRESSION IN NON-INSTITUTIONAL HEALTH CARE
SETTINGS: PREDICTORS OF REPORTING BY HEALTHCARE PROVIDERS

by

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ABSTRACT

This dissertation is conducted to examine the factors which contribute to the reporting of incidents of violence or aggression perpetrated by patients against health care providers in non-institutional health care settings. With a theoretical foundation grounded in community science, applying stress theory, broken windows theory and the theory of reasoned action, the following cross sectional study examines the contribution of characteristics of the healthcare provider, characteristics of the patient perpetrator and the form of violence to the providers' reporting or failing to report incidents. A self-administered survey was disseminated to a sample of non-institutional healthcare providers to test the research hypotheses about variables associated with reporting of incidents. The final sample size included 218 respondents, of which 213 met inclusion criteria for the study. 79.4% (N=169) of respondents had experienced at least one form of patient violence or aggression and were thus eligible for inclusion in the statistical analysis. The collected data was then analyzed through use of logistic regression to determine the contribution of each variable and the relative impact on the dependent variable of incident reporting. Findings indicated that there is a statistically significant contribution of the form of abuse, specifically verbal abuse in comparison to sexual abuse, to incident reporting. Specifically, the odds of reporting abuse are four times higher among individuals experiencing verbal abuse in contrast to providers subjected to patient-perpetrated sexual abuse.

I would like to thank my family for their unrelenting support of the time and attention required of this endeavor and the nights and weekends they made due without me, thus allowing me to pursue this degree. To my dearest Katie and Hannah, who went to bed without me, and all those friends and family members who encouraged me to push on throughout this process, thank you.

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Campbell, C. (2014). Enhancing Homecare Staff Safety through Reducing Client Aggression & Violence in Non-Institutional Care Settings. In Needham, I., Kingma, M., McKenna, K., Frank, O., Tuttas, C., Kingma, S., & Oud, N. (Eds.) Workshop presented at the 4th International Conference on Violence in the Healthcare Sector (pp.99-103). Amsterdam, The Netherlands: Kavanah.

Campbell, C., McCoy, S., Burg, M., & Hoffman, N., (2014). Enhancing Homecare Staff Safety through Reducing Client Aggression & Violence in Non-Institutional Care Settings: A Systematic Review. *Home Health Care Management and Practice*, 26(1), 3-10.

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INTRODUCTION

Patient perpetrated violence against healthcare providers has been estimated to impact more than 90% of healthcare providers. Accurate reporting of incidents has been demonstrated to be a crucial step in combatting the problem. Yet, research has found that healthcare providers overwhelmingly under report episodes of patient violence or aggression. Little is known about the factors that contribute to providers' decision to report incidents of patient violence or abuse perpetrated against them while providing care in non-institutional care settings. It is the aim of this research to examine factors that contribute to this phenomenon, thereby enhancing understanding of provider incident reporting and to inform future research about those aspects which may be best targeted to ultimately improve the safety of healthcare providers working in non-institutional settings.

This research employs a community science framework, with a theoretical foundation grounded in stress theory, broken windows theory, and the theory of reasoned action to explore provider incident reporting. A cross-sectional survey was conducted to answer the overarching research question as follows: what are the factors that contribute to non-institutional healthcare providers reporting or failing to report incidents of patient violence/aggression perpetrated against the provider? Within this overarching question are three sub-questions, examining specifically the impact of the form of abuse or aggression, the characteristics of the healthcare provider, and characteristics of the patient perpetrating the abuse on incident reporting. Consequentially, specific variables included in this research are the dependent variable of the providers reporting abuse and the independent variables of form of abuse, characteristics of the

provider and characteristics of the patient. The researcher-developed instrument of 37-38 questions to explore these aforementioned variables was piloted in a focus group and was found to have strong face and construct validity. Upon receipt of IRB approval, surveys were disseminated to healthcare workers employed in non-institutional care settings. Logistic regression was then employed to determine the amount of variance in incident reporting accounted for through the combination of examined independent variables.

LITERATURE REVIEW¹

Workplace violence in the healthcare sector has begun to receive international attention, with the first International Conference on Workplace Violence in the Health Sector occurring in 2008 and the World Health Organization (WHO) acknowledging workplace violence as an international problem (Needham, Kingma, O'Brien-Pallas, McKenna, Tucker, & Oud, 2008). The terms "client violence" and "workplace violence" are used interchangeably in the literature to describe the phenomenon of acts of aggression (verbal and physical) by the client towards the provider. The WHO defines this phenomenon as "incidents where staff are abused, threatened or assaulted in circumstances related to their work . . . involving an explicit or implicit challenges to their safety, well-being or health" (Campbell, 2014b; O'Brien-Pallas, Wang, Hayes & Laporte, 2008). The National Task Force on Violence against Social Care Staff defines client violence as "incidents where persons are abused, threatened or assaulted in circumstances relating to their work, involving an explicit or implicit challenge to their safety, well-being or health" (Department of Health, 2000, p. 7). The National Institute of Health and Safety defines this as

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“violent acts, including physical assaults and threats of assault, directed towards a person at work or on duty” (1996, p. 1). Additional definitions have been found in scholarly literature defining client violence as “any incident in which a helping professional is harassed, threatened, or physically assaulted by a client in circumstances emerging for the course of the professionals’ work with the client” (Campbell, McCoy, Burg, & Hoffman, 2013; Campbell, 2014a; Macdonald & Sirotich, 2001, p. 109) and as “actual physical assault, threats, or any other event the individual worker may deem as violent. The violent incident may also be defined by the worker’s perceptions and the context in which the incident occurred” (Campbell, 2014a; Spencer & Munch, 2003, p. 534).

As these definitions suggest, client aggression and violence can take many forms, to include physical attacks, verbal abuse as well as threatening behavior (Krug, Mercy, Dahlberg, & Zwi, 2002; Freyne & Wrigley, 1996). Workplace violence is recognized as a serious health hazard for employees in a variety of occupations, with evidence indicating that prevalence varies depending on the type of work environment and profession (Flannery, 1996; McPhaul et al, 2008; Pawlin, 2008; Runyon, Zakocs, & Zwerling, 2000). Healthcare workers are among a group of workers that are subject to some of the highest rates of workplace violence incidents (Janocha & Smith, 2010); studies have found that as many as 92% of healthcare workers have experienced abuse or violence by patients, including threats, assault and sexual harassment (Franz, Zeh, Schablon, Kuhnert & Nienhaus, 2010). The research indicates that health care workers have a heightened risk of experiencing client violence compared to other helping

professions, and an estimated 16 times higher risk than for any other service profession (Hinson & Shapiro, 2003; Kingma, 2001; Smith-Pittman & McKoy, 1999). Within the past 15 years, research has begun to examine violence and aggression towards healthcare workers in institutional care settings such as nursing homes and emergency rooms (Dougherty et al, 1992; Gerberich et al, 2004; Keely, 2002; Smith-Pittman & McKoy, 1999; Taylor & Rew, 2010), yet research on this phenomenon in non-institutional healthcare settings remains in its infancy.

Serving as “a continuum of coordinated extended care services, non-institutional health care settings are those which provide medical services outside of formal institutions such as hospitals and nursing homes and typically include home health services, hospice services and in home respite programs” (Campbell, 2014b, p. 99; Weissert, Cready & Pawelak, 1988; North, Kehm, Bent, & Hartman, 2008; Shaughnessy et al, 2002). Since the passage of the Patient Protection and Affordable Care Act (PPCA) and with increasing utilization of the evidenced based practices of the Patient-Centered Care Model (PCCM), the healthcare industry is placing a greater emphasis on providing medical and psychosocial care to clients in non-institutional healthcare settings (Kass, 2001; Mason & Gammonley, 2012; Silver, Keefer & Rosenfeld, 2011). This change is resulting in an increasing number of providers serving clients outside of traditional hospital and clinic settings (Brennan, 2010; Silver et al, 2011; Weissert et al, 1988). As this transition occurs, there are increased risk and added safety concerns which arise for lone workers providing care in patient homes (Billay, 2002; Henry & Henry, 1997; Thobaben & Woodward, 1996). Terminology such as the “‘lone worker’ has been utilized internationally to

define the healthcare provider who works independently with limited supervision and without close geographic proximity to colleagues” (Brennan, 2010; Campbell 2014b, p. 99).

Due in part to the discrepancies used to define this phenomenon, prevalence of actual or threatened physical assault against health care workers has a wide range, estimated to be between 17% and 74% (Macdonald & Sirocich, 2001; Magin, Adams, Sibbritt, Joy & Ireland, 2008; McGowan, Wynaden, Harding, Yassine, & Parker, 1999; Ringstad, 2005; Schulte et al, 1998). For lone workers, verbal abuse is the most common form of patient aggression, estimated to be perpetrated on anywhere between 33% to 87% of home care staff (Barling, Roberts & Kelloway, 2001; Bussing & Hodge, 2004; Campbell, 2014b; Macdonald & Sirocich, 2001; Schulte et al, 1998). Studies support the assertion that the risk of staff experiencing such incidents is heightened when working in non-institutional care settings (Barling, et al, 2001; Campbell, 2014a; Geiger-Brown et al, 2012; Spencer & Munch, 2003). Nakaishi et al. (2013) conducted focus groups consisting of 83 home care workers and 99 Department of Human Services Employees from Oregon. These authors found a higher rate of physical violence (44%), sexual violence (14%) and sexual harassment (41%) among the home healthcare workers surveyed than among healthcare providers working in institutional care settings. According to a self-reported survey among registered nurses (n=738) working in 32 home health care agencies in New York State, 19% reported more than two violent incidents on the job and 63% reported one to two violent incidents (Canton et al, 2009). Of these incidents, 3.3% of were physical assault, 8.9% theft, 16.3% physical harm, and 58.9% were verbal abuse.

While the majority of this research has been conducted in the nursing field, incidents of patient violence and aggression transcend disciplinary boundaries, affecting home health aides, nurses, psychologists, social workers, chaplains, physicians and other direct care staff (Barling et al, 2001; Beech & Leather, 2006; Campbell, 2014b; Gallant-Roman, 2008; Pawlin, 2008). The consequences of such patient violence impact not only the individual health care workers, but the healthcare industry at large (Campbell et al, 2013; Kingma, 2001; O'Boyle, 1995; Galloway, 2002). Studies find that lone workers are less effective when working in dangerous environments, experience greater probability of compassion fatigue, decreased job satisfaction and decreased commitment to the healthcare organization (Barling et al, 2001; Spencer & Munch, 2003). As a result, healthcare agencies are now facing challenges of providing patient-centered healthcare in non-institutional care settings while ensuring the safety of their healthcare providers who serve patients in such settings. (Campbell, 2014b).

The negative effects of patient aggression and violence for the healthcare provider include experiencing increased stress or anxiety at work as well as more prolonged issues such as poorer overall health, increased depression, psychosomatic issues, concentration issues, lower perceived job satisfaction, and post-traumatic stress (DiMartino, 2003; Hesketh et al, 2003). Additional complications include physical injury, increased medical expenses, loss of work time, psychological injury and decreased job performance (Barling et al, 2001; Beech & Leather, 2006; Hesketh et al, 2003; McGovern et al, 2000; Spencer & Munch, 2003). Healthcare organizations that employ home health workers also experience significant consequences from

patient violence and aggression towards employees (Kelloway & Day, 2005; Schat & Kelloway, 2003) with both direct and indirect costs to the organization. Often these are associated with compensation claims and indirect costs of difficulty with recruitment and retention of health care providers (Beech & Leather, 2006; Jackson, Clare & Mannix, 2002; McGovern et al., 2000). Additionally, the literature confirms that the experience of patient aggression and violence results in the workers' decreased commitment to the healthcare agency (Canton, et al., 2009; Gates, Gillespie & Succop, 2011; Nakaishi et al., 2013; Valdez, 2010). Significant consequences also exist for patients when providers are exposed to violence and aggression while at work; these include shortened visits, decreased frequency of visits and decreased quality of care (Arnetz & Arnetz, 2000; Galinsky et al, 2010).

Incident Reporting by Healthcare Workers in Non-Institutional Care Settings

While these consequences are indeed problematic, national and international attention is now focused on patient violence and aggression in healthcare settings, the literature overwhelmingly suggests that patient aggression and violence towards healthcare workers is under reported (Fernandes et al, 1999; Gates, Ross & McQueen, 2005; Hesketh et al., 2003; Hutchings et al, 2011; Pawlin, 2008; Taylor & Rew, 2010; Zuzelo, 2010). Due to many complex factors not well explored in the literature, healthcare workers often fail to report incidents of client violence (Erickson & Williams-Evans, 2000; Hutchings et al., 2011; Taylor, 2000). Meanwhile, research suggests that ensuring accurate incident and prevalence reporting is a key element in the prevention of client violence against healthcare workers (Bussing & Hodge, 2004;

Franz et al, 2010; Freyne & Wrigley, 1996; Geiger-Brown et al, 2012; Macdonald & Sirotich, 2001; Schulte et al, 1998). This literature review aims to examine the factors that have the potential to impact the healthcare provider's decision to ultimately report or fail to report such incidents.

Specifically examining the importance of incident reporting, Hutchings et al., (2011) conducted a mixed methods mailed survey of home care staff and found that when there is accurate reporting of incidents, staff have an increased perception of safety. Unfortunately, this study had a low response rate, with a greater number of staff completing the posttest compared to the pretest, raising questions regarding the validity of findings (Campbell et al, 2013). MacDonald & Sirotich (2001) reviewed the underreporting of incidents of client violence among social workers using a randomized mail questionnaire and found that under reporting occurs frequently in this population. However, one limitation of this study was the lack of discrimination between institutional and non-institutional care providers and settings.

Studies suggest that that accurate reporting of violent incidents not only increases staff awareness of the investigated phenomena but also increases staff confidence in their ability to respond to such incidents (Arnetz & Arnetz, 2000). Arnetz and Arnetz (2000) found that as incidents are accurately reported to allow for accounting of incidents, staff perception of well-being and ability to react to the incident is greatly enhanced. However, this study acknowledged that the intervention group, which was afforded training on incident reporting, was at onset at a greater risk for client violence and the authors report a limitation of loss of follow up with the

intervention group. Currently there are a limited number of studies on the topic, however those which exist find that accurate incident reporting is a critical component in the prevention of workplace violence (Crilly, Chapman & Creedy, 2004; Winstanley & Hales, 2008), thus suggesting that there is a need for further rigorous research which examines specifically incident reporting of violent or aggressive acts of patients toward health care providers in non-institutional healthcare settings.

In a systematic review of the literature examining patient violence and aggression in non-institutional health care settings, Campbell, McCoy, Hoffman and Burg (2014) found that there are a limited number of published studies with a specific focus on workplace violence in non-institutional care settings such as home health care agencies. This review also indicated that understanding the unique setting of care delivered in the patients' home is an important criterion in evaluating the phenomenon of patient aggression and client violence. As such, it is the goal of the remainder of this review to examine the factors suggested in the literature that may impact the decision of the healthcare provider to report incidents of patient violence or aggression perpetrated by a patient. Identifying these important factors will contribute to the development of a conceptual framework for understanding the decision of the healthcare provider to report such incidents.

Factors Impacting Incident Reporting

The literature supports the assertion that accurate incident reporting is critical to fully understand patient violence and aggression towards healthcare providers (Arnetz & Arnetz,

2000; Clements et al, 2005; Crilly et al, 2004; Hinson & Shapiro, 2003; Macdonald & Sirotich, 2001). Currently there is limited research examining provider decision making related to reporting incidents of patient violence and aggression targeted towards the provider. There is an even greater paucity of research specifically examining this issue in non-institutional healthcare settings (Galinsky et al, 2010). Therefore, this literature review examines this phenomenon across service settings in order to offer a comprehensive review of incident reporting and to examine rationales for providers reporting or failing to report instances of patient violence and aggression towards healthcare providers. The existing research includes both inpatient and home care settings involving clinical staff as well as administrative agency staff. It covers diverse populations of mental health patients, dementia patients and geriatric clientele, thus facilitating the development of a multi-system understanding the phenomenon. This review also includes what is known about incident reporting across the various professional groups including nurses, psychiatrists to home health aides as well as social workers and public health officials.

Several themes related to reporting aggression emerge in this review including patient characteristics, provider characteristics, the form of the aggression perpetrated and social norms regarding reporting. Each of these elements has been found to impact the provider's perception of the aggression and violence, consequently impacting the likelihood of providers reporting the incident. As such, each warrants further explanation as it is the goal of this research to examine those factors which impact healthcare providers' reporting or failing to report violent incidents.

Patient Characteristics

Studies have found that patient demographics play a role in the prediction of patient violence, with younger patients and unmarried patients being more likely to perpetrate violence against their healthcare providers (Keely, 2002). Multiple studies have found that patients with cognitive impairments, chronic pain or acute illness and active substance use/abuse are the most likely to perpetrate abuse towards their healthcare providers (Gallant-Roman, 2008; Galinsky et al, 2010; Gates, Fitzwater, & Meyer, 1999; Keely, 2002; Lanza, 1992; Mayer, Smith & King, 1999; Papadopoulos et al, 2012; Swanson et al, 1999; Wharton & Ford, 2014). There is evidence that certain patient characteristics, such as health condition or illness impact healthcare provider incident reporting, yet the specific contribution of patient characteristics on incident reporting is not known (Brennan, 2010; Crilly et al, 2004; Erickson & Williams-Evans, 2000; Ferns, 2006; Freyne & Wrigley, 1996; Gates, 2004; Janocha & Smith, 2010; Luck, Jackson, & Usher, 2008). The attitudes attributed by health care providers to these patient characteristics are also viewed as playing a role in a provider's decision to report such incidents (Lanza, 1992; Zellman, 1990a). In a study of nurses who are victims of patient assault, Lanza (1992) found that patient characteristics played a critical role in the providers' reporting violence. From this study, it was suggested that the providers' perception of the patient's vulnerability was a key feature to determine whether assaults were reported, with perceived vulnerability decreasing reporting.

One area where patients are often seen as vulnerable is when they are afflicted with cognitive impairments (Blow et al, 1999; Department of Health, 2000; Ryden, 1988; Wharton &

Ford, 2014). Aggression and violence by clients with cognitive impairments, including dementia, is well studied in nursing home settings. Patients with cognitive impairments are found to be 20% more likely to be aggressive towards their caregivers and providers; dementia is cited as one of the primary medical diagnoses indicating probability of abuse towards providers (Galinsky et al, 2010; Wharton & Ford, 2014). Yet recent research has found that as many as 82% of instances of abuse or violence by a patient with dementia go unreported (Pawlin, 2008). In attempts to explain this, Ferns and Chojnacka (2005) indicate that providers for elderly and cognitively impaired patients do not attribute blame towards the patient and, as such, fail to report aggression or violence perpetrated by this population. These authors suggest that patients who are confused or disoriented are often categorized as ‘unintentional’ aggressors, per healthcare staff’s perception, and as such their acts of aggression are often excused and go unreported by healthcare providers.

Studied almost exclusively in inpatient healthcare settings, other patient attributes well studied in the healthcare field are acute pain and psychiatric illness. Research surveying healthcare providers in emergency rooms and nursing homes overwhelmingly finds that patients with acute pain and psychiatric illnesses are some of the most common perpetrators of violence and aggression towards healthcare providers (Crilly et al, 2003; Gates et al, 2005; Hesketh et al, 2003; Kowalenko, Walters, Khare & Compton, 2005; Mayer et al, 1999; Swanson et al, 1999). In a study of Veterans Health Administration patients, among those patients who perpetrated abuse towards their institutional healthcare providers, 92% of the patient perpetrators had a

mental health diagnosis (Blow et al, 1999). Studies have also documented that patients who are experiencing severe pain or acute illnesses are often ‘excused’ for acts of violence and aggression by the healthcare provider, and consequentially these acts go unreported (Ferns & Chojnacka, 2005). Patients experiencing acute or chronic psychiatric illnesses are also less likely to be reported for acts of aggression and violence towards healthcare providers (Hesketh et al, 2003; Pawlin, 2008).

Studies have demonstrated that use of alcohol and drugs have a strong influence on the likelihood that violence or aggression will be perpetrated against the healthcare provider (Mayer et al, 1999; Taylor & Rew, 2010). It has been estimated that, in emergency room settings, 88% of nurses believe that patient abuse and violence is attributed to alcohol use and 79% of nurses believe that aggressive or violent patients are under the influence of illicit drugs (Crilly et al, 2004). Such findings, however, are extremely limited in non-institutional healthcare settings and with lone workers. There is also a paucity of research about how these factors are related to incident reporting behavior and whether perpetrating aggression and violence while under the influence of drugs or alcohol is related to the likelihood of incident reporting among healthcare providers.

Provider Characteristics

Patient attributes are not the only factor suggested in the literature as contributory towards incident reporting; another finding of this review is that the discipline and field of the clinician impacts the prevalence and reporting of violent incidents. A large portion of the

research reviewed utilized nursing as the primary discipline experiencing client violence and aggression, followed closely by social work clinicians and psychiatric/mental health care staff (Gates et al, 2005; Hinson & Shaprio, 2003; Winstanley & Hales, 2008). This is relevant in that it demonstrates that the phenomenon under investigation is not a discipline specific issue but one affecting all forms of healthcare providers, and as such can be effectively studied with an interdisciplinary lens. However, the healthcare providers' professional field has been shown to impact the prevalence of violence perpetrated against the provider; geriatrics, mental health and nursing fields have higher risk of patient assault than other fields (Gates et al, 2005; Hodgson et al, 2008).

Demographic difference among providers has also been found in the literature as having an impact on exposure to and reporting of patient violence and aggression. Among a survey of emergency room physicians, Kowalenko et al (2008) found that years of experience and provider age are factors that are correlated with a lower incidence of reporting violence. These authors found that the less experienced provider was more likely to experience verbal and physical assault. Their study, however, did not differentiate if this was due to underreporting of more experienced providers or if indeed it is less likely that patient violence is perpetrated against experienced workers. Additional studies have investigated provider attributes, supporting the conclusion that years of experience and age of the provider do indeed impact reported assaults (Crilly et al, 2004; Galinsky et al, 2010; Mayer et al, 1999). Conflicting findings exist when it comes to reporting violence when examining factors such as age and years of experience. The

literature suggests that older individuals have a lower level of tolerance towards violence (Garcia & Herrero, 2006) yet other studies have found that less experienced providers report such aggression more than more experienced providers (Markowitz & Felson, 1998). The question therefore remains whether age or years of experience of the provider impacts their intent and decision to report patient violence and aggression. Similarly, the question arises with gender, as the literature has found that females are more likely to report patient violence or aggression (Fazzone, Barloon, McConnell & Chitty, 2000; Ferns, 2006; Keely, 2002; Kowalenko et al, 2008; Markowitz & Felson, 1998; Rosen, 2001). While multiple studies indicate that females are the primary reporters of patient violence or aggression, there is currently inadequate data to conclude that is due to a gender difference in attitudes towards reporting of incidents or rather due to a higher prevalence of violence towards female providers.

One possible explanation for provider demographic differences in reporting could be attributed to provider attitudes (Pfeiffer, Manser & Wehner, 2010). In the domestic violence field, it has been found that youth and males are more likely to have an attitude towards approval of violence than older individuals or females (Garcia & Herrero, 2006; Markowitz & Felson, 1998). While a direct link is not found within the healthcare field, parallel findings exist regarding attitudes towards violence and incident reporting in the domestic violence sector. In the domestic violence literature, individuals with high tolerance towards violence are found to be 63% less likely to have positive attitudes about reporting violence in comparison to individuals with lower tolerance towards violence (Garcia & Herrero, 2006). Other literature suggests that

fear of being blamed for the incident, fear that their own competence may be questioned and being concerned about making others look bad may influence tendencies to report violence (Pfeiffer et al, 2010). Fear of retaliation or reprisal is another reason that is cited for low prevalence of incident reporting in the domestic violence field (Felson, Messner, Hoskin, & Deane, 2002). These same themes are also found in the child abuse literature as the primary reasons even mandated reporters fail to report abuse (Zellman, 1990b). Early studies have indeed found this to be the case in the healthcare field as well, finding there is fear of blame and peer pressure against reporting incidents of patient aggression (Lanza, 1992).

There are also provider norms which impact the providers' reporting or failing to report incidents of patient violence (Hinson & Shapiro, 2003). Some researchers have identified a norm against reporting such incidents, where providers have been conditioned that tolerating patient violence and aggression is 'part of the job' (Galinsky, 2010; Gates, 2004; Gates et al, 1999; Hinson & Shapiro, 2003). It has also been suggested that "an exclusively client-centered perspective within the profession's ideology is said to foster an increased likelihood that client violence will not be reported" (Macdonald & Sirotich, 2001). In the domestic violence literature, Garcia and Herrero (2006) found that when norms are openly discussed and reporting is encouraged, the odds an incident will go unreported decrease to 32%. This author therefore postulates that the provider's attitudes tolerating violence and social norms opposed to incident reporting would impact the healthcare providers' intent to report instances of patient violence and aggression.

The literature also suggests that the empathetic nature of home healthcare providers is often in conflict with reporting incidents of abuse or aggression (Zuzelo, 2010b). In line with the current paradigm of patient centered health care, providers may fear getting the patient in trouble and as such excuse the violent behavior. Additional studies have found that the discipline of the healthcare provider, specifically the tasks performed with patients, also makes a difference regarding the outcomes of workplace violence, with more concrete services such as nursing and bathing services being more hands-on in comparison to those such as in home therapies of occupational therapy or social work (LeBlanc & Kelloway, 2002).

Noting these differences, the question arises as to the healthcare providers' service setting and the role this plays in incident reporting. Specifically examining non-institutional healthcare Fazzino et al. (2000) found patient violence and aggression are impacted by the client's community characteristics and time of staff visit as well as personal characteristics of the clinical care staff. Communities with high crime levels and visits conducted during nighttime hours present higher probability of client aggression and violence. McPhaul, Lipscomb and Johnson (2010) add to the discussion of risk level based on setting, reporting within institutional settings that overcrowding and long waits for services increase probability of client aggression.

Despite these differences among providers and service setting, some common themes are found in the review regarding what additional characteristics or qualities about the provider impact incident reporting. One such theme is time management. Ferns & Chojnacka (2005) report that health care professionals become 'too busy' to engage in incident reporting, and that it

is too time consuming and cumbersome to report all incidents of abuse. Another theme, consistent with the explanation the provider's attitudes plays a role in incident reporting, is that the provider's judgment about the severity of the incident also play a role in determining whether the incident is reported (Taylor & Rew, 2010). As such, it is relevant to examine if there is a discrepancy in whether the form of abuse plays a role in the provider's decision to report incidents.

Form of Aggression

Another theme identified in this review is that the form of abuse perpetrated has a significant impact on the providers' reporting or not reporting instances of abuse or violence. This is well examined within the domestic violence field, with clear findings that the form of abuse perpetrated has an impact on whether victims report such abuse (Gartner & MacMillan, 1995). Research has demonstrated that often violence is only considered as such when it is severe or repeated, and in other forms it is viewed as not above the threshold required to motivate reporting it (Garcia & Herrero, 2006; McPhaul & Lipscomb, 2004; Zellman, 1990a). This has also been found to be consistent in examining patient aggression towards a healthcare provider; the form of abuse or aggression perpetrated by the client against the healthcare provider has been shown to have an impact on the probability of violent incidents being reported (Franz et al, 2010; Gates et al, 2005; Macdonald, Lang, & MacDonald, 2011; Macdonald & Sirotich, 2001). While physical assaults with substantial injury, resulting from utilization of workman's compensation or loss of time at work, are the most frequently reported of incidents,

‘lesser’ assaults such as verbal abuse or threats of violence are less likely to be reported (Fernandes et al, 1999; Pawlin, 2008). Research examining this phenomenon has suggested that attitudes towards verbal abuse and threats of violence are often deemed ‘not serious enough’ (Lanza, Zeiss, & Rierdan, 2006; Macdonald & Sirotich, 2001) or ‘not worth reporting’ (Ferns & Chojnacka, 2005). Estimates are as high as 66% of incidents of verbal abuse are not reported (Fernandes et al, 1999). One explanation of this offered in the literature is that it is the provider’s values, personal attitudes and social norms regarding the form and severity of the violence that have been found to be a critical element of reporting behaviors (Lanza et al, 2006; Markowitz & Felson 1998).

Reporters’ attitudes have also been found to have an impact on whether incidents are reported based upon the severity of the incident (Swanson et al, 1999). Specifically, in the healthcare field, as explained by Garcia and Herrero (2006), there can be an underlying social norm in which behavior is only conceptualized as violence when it is severe and extreme, less extreme behavior is often more socially acceptable. Unfortunately, studies have found that while verbal abuse and threats of violence are more prevalent than acts of physical violence, such forms of violence tend to precede physical violence (LeBlanc & Kelloway, 2002). Thus these ‘lesser forms’ of abuse and violence also warrant reporting as this is a critical key to understanding and preventing provider abuse (Hegney, Ely, Plank, Baukstra & Parker, 2006; McPhaul & Lipscomb, 2003; Peel, 1999).

Public Affairs Significance of Research

In the late 1990's the World Health Assembly acknowledged that violence is a problematic public health issue, and only recently has the WHO begun producing the World Report on Violence and Health (Krug et al, 2002). This international attention clearly sends the alert that workplace violence warrants attention in public affairs forums. While violence is a well-explored phenomenon, exploration of workplace violence in the healthcare sector remains in its infancy. The study of violence in non-institutional healthcare settings (Campbell et al, 2014; Galinskey et al, 2010) is particularly nascent. The National Institute of Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA) have defined guidelines for workplace violence prevention and response protocols in healthcare organizations, with evidence that "an integrated organizational perspective" is required. It should incorporate explicit workplace violence monitoring tools, differentiated training for staff and a predetermined response protocol (Leather, Beale, Lawrence, Brady & Cox, 1999).

Research is also needed to specifically examine factors related to identifying the potential for patient violence and aggression towards their healthcare providers as well as mechanisms to reduce the preponderance of these incidents (Campbell et al, 2014; Campbell, 2015; Franz et al, 2010; Macdonald et al, 2011). Franz et al., (2010) add to the discussion of the neglected research areas, asserting that "systematic research of the causes and consequence of aggression and violence towards employees in the health care system . . . are still being neglected" (p. 52). They underscore that without accurate frequency and prevalence statistics resulting from

underreporting, prevention and policies are hindered (Campbell et al, 2013). Evidence-based best practices prevention protocols found in the literature include organizational responses to violence monitoring systems present for incidents. As such, accurate incident reporting is critical to ensure adequate violence monitoring, which may enable improvements in NIOSH and OSHA recommended interventions.

The literature clearly suggests that accurate information on prevalence and factors contributing to patient violence and aggression is needed to develop effective and efficient interventions to combat this public affairs problem. Unfortunately, at this time, there is a paucity of research and scholarship exploring how provider's decision-making processes contribute to incident reporting. Underreporting of such incidents continues to hamper the field from developing effective interventions and strategies to enhance healthcare providers' safety and well-being when providing healthcare services in non-institutional care settings. Under reporting of incidents of client violence not only results in a paucity of evidence of client aggression in homecare, but also in difficulty measuring the phenomenon and subsequently contributes to the lack of ability to devise interventions to address the safety concerns (Bussing & Hodge, 2004; Macdonald et al, 2011).

Healthcare agencies have both a legal and an ethical obligation to ensure safety of staff (Campbell, 2014a; Iverson, 1997). The added benefit of providing safe environments for health care staff is providing optimal care to patients and clients served (Franz et al, 2010).

Recognizing this need, the Joint Commission issued a Sentinel Event Alert in 2008 reporting that

workplace violence and aggression, once viewed with “tolerance and indifference,” should no longer be a tolerated workplace hazard (Campbell et al, 2013). Within the healthcare industry, hospitals and clinics have responded with research to support agency policies and protocols to enhance employee safety in institutional settings. However, similar studies are currently lacking for the non-institutional healthcare setting.

Critique and Synthesis of the Literature

The literature overwhelmingly identifies that healthcare workers experience aggression and violence at alarming rates, transcending discipline boundaries (Franz et al, 2010; Galloway, 2002; Galinskey et al, 2010; Gerberich et al, 2004; Jancoha & Smith, 2010). Additionally, the evidence supports that incidents of patient violence and aggression towards healthcare providers are under reported (Beech & Leather, 2006; Ferns, 2006; Ferns & Chojnacka, 2005; Hesketh et al, 2003; Krug et al, 2002; Nakaishi et al, 2013; Pawlin, 2008; Pfeiffer et al, 2010; Taylor & Rew, 2010; Valdez, 2010). The social, organizational and personal consequences for staff experiencing patient aggression and violence, include decreased staff efficiency, well-being and decreased quality and quantity of health care being provided (Barling et al, 2001; Campbell 2014a; Galloway, 2002; Hegney et al, 2006; Kingma, 2001; O’Boyle, 1995; Spencer & Munch, 2003). From this review it appears that a precursor to the development of effective intervention strategies is the development of accurate prevalence reports and incident reporting of client violence (Arnetz & Arnetz, 2000; Bussing & Hodge, 2004; Franz et al, 2010; Freyne & Wrigley, 1996; Geiger-Brown et al, 2012; Macdonald & Sirotich, 2001; Schulte et al, 1998).

These facts are well established, however a clear evidence base that demonstrates understanding issues related to provider reporting victimization is lacking. Specifically, it is unclear which constellation of factors is most predictive of the likelihood a provider will report being a victim of patient perpetrated violence and aggression in non-institutional healthcare settings. As evidenced in this review, there are similar themes in the research related to incident reporting in the healthcare field. Unfortunately, most studies have been conducted in institutional care settings such as nursing homes, emergency departments and hospitals, with a primary focus on the nursing profession. The literature examining lone workers tends to be conceptual, rather than based on rigorous research designs (Beech & Leather, 2006; Billay, 2002; Gallant-Roman, 2008; Hinson & Shapiro, 2003; Keely, 2002; Kelloway & Day, 2005; Lanza et al, 2006; McPhaul & Lipscomb, 2003, 2004; Papadopoulos, 2012; Rosen, 2001; Silver et al, 2011; Spencer & Munch, 2003). The research that does exist on the topic of the healthcare lone worker and their experience of patient violence and aggression continues to identify incident reporting as crucial (Barling & Rogers, 2001; Bussing & Hodge, 2004; Fazzone et al, 2000; Galloway, 2002; Geiger-Brown et al, 2012; Hesketh et al, 2003; Magin et al, 2008; McPhaul et al, 2010) but fails to examine those factors which contribute to the providers reporting violence.

Despite these limitations, the themes suggested in the existing studies of patient characteristics associated with perpetrating violence may also be applicable to a study of factors contributing to provider likelihood to report violence. Research in institutional healthcare settings suggests that clients with mental illness (Amore et al, 2008; Crilly et al, 2004; Hesketh et

al, 2003), substance abuse (Crilly et al, 2004; Mayer et al, 1999) and chronic medical ailments, including dementia (Blow et al, 1999; Dougherty et al, 1992; Galinsek et al, 2010) are those most likely to perpetrate abuse. Limitations, however, exist with each of these studies in applicability to the foci of this study.

Amore et al (2008) conducted rigorous research using pre and post testing and standardized, valid and reliable measures to identify social indicators and risk factors predictive of patient violence and the demographic variance of patients predicting violent incidents. However, their study was limited to inpatient psychiatric units and did not extend to determine whether these factors contributed to the provider reporting the incident of abuse or aggression. Due to the study being conducted without a theoretical framework and its limited generalizability due to the setting selected, it raises the question regarding the applicability of these factors as moderating effects on incident reporting in other settings. Another rigorous study, conducted prior to the Joint Commission 2008 guidelines, examined patient violence within the Veterans Administration (Blow et al., 1999). While the study does identify characteristics of patients perpetrating assault, again, the examination of contributory patient factors was limited to inpatient settings, and was conducted through a record review, thereby only capturing those incidents which were reported to management and failed to capture all other forms of assault or violence which did not result in workers' compensation claims or staff absenteeism.

Another example, provided by Crilly et al (2004), similarly focuses on institutional care settings and more closely on patient factors which contribute to providers reporting incidents.

However, the study has low generalizability, due to only 108 respondents and a focus of exclusively nursing providers, as well as a limited geographic area serviced by the single emergency department evaluated. Additional studies also examining these patient factors which are correlated with provider incident reporting, such as that by Mayer et al (1999), also suffer from very small samples and low response rates. Hesketh et al. (2003) examined incident reporting within inpatient psychiatric settings offers strong methodology and instrumentation to measure incident reporting. However, these authors do not discriminate their study findings based upon the perpetrator of the assault, encompassing assaults including staff on staff, patient family assault, as well as patient assault. Specifically examining homecare, Galinsky et al (2010) examined the factors of patients which predict risk of violence, but did not examine reporting to the healthcare agency regarding the incidents. This study was also plagued with limitations of selection biases and convenience sampling techniques, limiting generalizability beyond the nursing field and home health agencies explored.

Additionally, there are themes found regarding provider characteristics for exposure to client violence and reporting of violent incidents, including years of experience (Crilly et al, 2009; Flannery, 1996; Franz et al, 2010; Galinsky et al, 2010; Hegney et al, 2006; Winstanley & Hales, 2008), gender (Fazzone et al, 2000; Kowalenko et al, 2005; Lanza, 1992), professional discipline (Fazzone et al, 2000; Galinskey et al, 2010; Mayer et al, 1999) and form of services provided (Dougherty et al, 1992; Gates et al, 2005). Within these provider themes, attitudes providers ascribe towards patient violence have also been demonstrated to have in impact on

provider and patient outcomes (Erikson & Williams-Evans, 2000; Luck et al, 2008; Macdonald & Sirotich, 2001; Markowitz & Felson, 1998; Schat & Kelloway, 2003) Again, limitations are inherent within each of these studies that limit the applicability to incident reporting in the non-institutional healthcare setting.

Similar limitations exist with many of the aforementioned studies. Low response rates, small samples or sampling biases in studies conducted within institutional care settings highlight potentially differing challenges and risks in the non-institutional care setting (Billay, 2002, Brennan, 2010). For instance, the 1992 study by Dougherty et al, conducted well before the passage of the PCCM, examines provider job satisfaction within the geriatric hospital setting. This study is plagued with response biases due to the sampling methods which utilized supervisor recruitment. The most common study designs range from descriptive to exploratory and include both qualitative and quantitative studies. However, the majority of these studies had low response rates, used survey methods that failed to maintain respondent anonymity, and were conducted within domestic violence or institutional healthcare settings.

The third common theme found to impact incident reporting is form of abuse. This factor is correlated with the providers' perception of violence as a reportable event (Erikson & Williams-Evans, 2000; Fernandes et al, 1999). Similarly, with the aforementioned themes, these studies, which suggest that the form of violence impacts reporting, also raise questions about generalizability to the non-institutional care setting. An early study examining form of abuse indicating that verbal abuse is the least likely form to be reported (Fernandez et al, 1999), was

conducted in a single urban hospital, and thus its generalizability is limited to home care. Additionally, there is no mention in the publication revealing the reliability or validity of the measurements utilized to draw this conclusion. Other research examining forms of abuse and the impact on incident reporting are solely conceptual or lack discrimination regarding health care service delivery setting (Billay, 2002; Brennan, 2010; Campbell et al, 2014; Gallant-Roman, 2008; Galloway, 2002; Hinson & Shapiro, 2003; Iverson, 1997; Lanza, 1992; Lanza et al, 2006; McPhaul & Lipscomb, 2004; Pfeiffer et al, 2010; Spencer & Munch, 2003; Valdez, 2010).

No literature found to date incorporates all of these factors using a solid theoretical framework to examine how each factor impacts the lone healthcare workers reporting the client violence. Specifically, regarding the intent of providers to report incidents of violence or abuse, the majority of the applicable theoretically based research on this topic is limited to the domestic violence and criminal justice literature or labor (Barling & Rogers, 2001; Felson et al, 2002; Garcia & Herrero, 2006). It is not specific to healthcare, despite documentation that indicates future research is needed in this area for the lone worker (Bussing & Hodge, 2004; Fazzone et al, 2000).

From the limited literature specifically examining providers' incident reporting, it is apparent that there are key factors that contribute to attitudes and social norms regarding patient violence (Erikson & Williams-Evans, 2000; Lanza et al, 2006; Luck et al, 2008; Magin et al, 2008; Markowitz & Felson, 1998; Taylor & Rew, 2010). These studies found that social norms against incident reporting and providers' attitudes regarding violence, patient aggression and

incident reporting all were contributory factors to their reporting incidents of abuse. However, these studies are limited by either service setting or discipline, do not expand to the non-institutional healthcare setting and are not clearly linked to providers' reporting incidents of abuse.

Literature Review Conclusion

The majority of studies available in the existing literature are descriptive, have limited samples sizes, and low response rates or flaws in sampling techniques and methodology. This proposed study aims to address these gaps. As incident reporting is postulated in the literature to be a key to fully understanding the phenomenon of patient aggression and violence towards healthcare providers, it is the goal of this research to examine those factors which impact healthcare providers' decision making process and ultimate reporting or failure to report such incidents. In doing so, this aims to enhance healthcare organizations' understanding of what elements to target to enhance incident reporting and combat the phenomenon of staff member under reporting of incidents.

In summary, as evidenced from this review, it is apparent that additional research is still required to identify factors contributing to a provider's reporting incidents of patient violence and aggression in non-institutional healthcare settings. The goal of this research project is to examine how characteristics of patients, characteristics of interdisciplinary providers and the form of violence and abuse perpetrated against providers in non-institutional healthcare settings contribute to a providers' reporting incidents of patient aggression. Ultimately this research aims

to enhance knowledge of the factors contributing to staff member reporting of incidents of violence and consequentially increase the healthcare agency's knowledge and ability to build effective violence prevention protocols and policies. Such knowledge has the potential to enhance patient care, provider safety and well-being and allow the safety of healthcare workers in non-institutional care settings to be a priority in concordance with The Joint Commission, WHO and NIOSH guidelines and recommendations.

THEORETICAL FRAMEWORK

This chapter creates a theoretical framework designed to illuminate factors contributing to non-institutional healthcare providers' reporting or failing to report incidents of patient violence and aggression. As the literature offers no singular theoretical foundation or approach specific to incident reporting and patient violence in the healthcare sector, a variety of theoretical approaches and disciplines provide guidance for the research. Theoretical frameworks from the fields of psychology, criminal justice, and the domestic violence literature will be used to explore a providers' reporting or failing to report instances of patient aggression and violence. The attributes of the patient, the form of abuse or aggression as well as provider characteristics will also be examined in relation to their impact on incident reporting.

Stress theory is utilized to explain and predict provider characteristics which impact decision-making regarding intention to report incidents of patient violence and aggression. Broken windows theory is offered to explain and predict how the form abuse or aggression and the severity of the incident impact provider reporting. Finally, the theory of reasoned action is suggested to offer a foundation for explaining and predicting the relationship between characteristics of the patient, the provider and the incident and the provider's reporting or failing to report the incident. Upon completion of this review of relevant theoretical frameworks, research questions and hypotheses are proposed for this study.

A Community Science Approach

The approach for this research that examines the phenomenon of provider reporting incidents of patient violence and aggression is grounded in community science. Community science “seeks to enhance theoretical and practical understanding of human behavior in community contexts.” The goals of community science are to “promote the competence, resilience, and well-being of individual and communities and prevent problem behaviors and other harmful outcomes at the individual and community level” (Tebes, 2005, p. 213). Utilizing such a definition, it is evident that exploration of factors contributing to healthcare providers’ reporting incidents of patient aggression and violence is well grounded within this approach. Understanding determinants of provider reporting incidents can contribute to community science goals of preventing harmful outcomes for health care providers, patients and organizations.

Within a community science approach, there are multiple theoretical frameworks which guide this exploration. While no literature found to date in the healthcare field examines the constellation of factors impacting healthcare providers’ reporting incidents of abuse or aggression, considerable research exists examining the occurrences of patient violence and aggression. One of these theoretical foundations utilized in the literature and applicable to this project is stress theory. Additionally, while literature is again limited in the examination of healthcare providers’ decision making processes to ensure their own safety, there is a plethora of literature in the criminal justice literature related to the domestic violence victim’s reporting their abuse and is well understood utilizing broken windows theory. The theory of reasoned action

(TRA) also provides a theoretical basis for evaluating this phenomenon and examining how characteristics of the patient perpetrating the abuse can factor into the providers' decision to report or fail to report such incidents. In summary, this chapter provides a theoretical basis for understanding patient violence and aggression and examines incident reporting in light of relevant theories that help explain and predict the healthcare providers reporting or failing to report incidents

Theoretical Foundation

Stress Theory

With a backdrop of biology and psychophysiology, focusing on the areas of health and behavior, stress theory has been closely linked to the maladaptive responses of individuals when faced with stress (Lerman & Glanz, 2002; Thoits, 1995). Throughout the literature, stress has been defined as a transitional experience which results in subjective negative perceptions and the lack of ability to adjust to such experiences (Cohen & Wills, 1985; Lazarus & Folkman, 1984). The concept is also defined in the literature as the experience of stressors (Aneshensel, 1992; Holahan & Moos, 1991). Thoits (1995) identifies three major forms of stressors: chronic stressors, daily stressors and major life events. Stressors can also be defined as events which disrupt an individual's homeostasis, thereby effecting both psychological and physical well-being (Lazarus & Cohen, 1977; Ursin & Eriksen, 2004). Utilizing these definitions, exposure to violence or aggression while providing care to patients in non-institutional health care services

could clearly be conceptualized as stress, and therefore well explained within this theoretical framework.

Under the umbrella of stress theory, there are multiple frameworks which offer explanations and predictions for the impact of stress (McCubbin, 1979; Stroebe, Stroebe, Abakoumkin, & Schut, 1996). Cognitive stress theory is one such construct that will be utilized throughout this chapter. For example, Stroebe et al. (1996) explain stress as a reaction to the major readjustment that is required with critical life events. These authors offer the prediction that without mediating social support to assuage the stress reaction, the intensity of stress and negative consequences of stress will become exacerbated. Ursin and Erikson (2004) assert that the stress reaction is a coping mechanism which occurs to create an alarm which should produce a coping behavior in reaction to the stressor. However, the authors' assert that if an adaptation is not made, the subjective stress can create adverse health effects for the individual experiencing the stress. Stress theory will be utilized in this case to examine the impact of the stressor on the provider's attitude and how characteristics of the provider contribute to incident reporting.

Broken Windows Theory

Found in the criminal justice literature, with application to the issue of patient aggression and violence towards the home healthcare provider, broken windows theory is of utility in this exploration. Broken windows theory, as articulated by Wilson and Kelling (1982; 1989), is based upon the assumption that if a broken window is unrepaired, all the windows will soon be broken; broken windows are a signal that no one cares (Ajzen & Fishbein, 1980). Following this

rationale, the theory postulates that the physical appearance of an environment suggests social norms regarding what is, and is not, socially acceptable behavior (Campbell, 2014a; Kelling, 1996; Maskaly & Boggess, 2014; Cohen et al, 2000). Furthermore, the theory suggests that when minor offences (such as littering or loitering, or in this case verbal threats or attacks) are tolerated, it is an indication to potential offenders that delinquent behavior of more extreme consequences will be neither reported or controlled (Harcourt, 1998; Hesketh et al, 2003). Broken windows theory places an emphasis on the social norms for a behavior, and argues that social deterrents are necessary to cease the perpetuation of minor crimes, thereby deterring more significant crimes (Harcourt, 2001). In summary, the premise of broken windows theory is that ignoring or tolerating lesser criminal acts creates an environment conducive to more serious crime.

While the majority of the literature to date which examines broken windows theory has been found in the criminal justice literature, the healthcare field and social service industries are beginning to utilize this theory to explain and predict violence in the healthcare sector (Hesketh et al, 2003; Mair & Mair, 2003; McPhaul & Lipscomb, 2004; McPhaul, 2005). As this theory places an emphasis on the social norms and also on the environment in which the violence occurs, this theory is of particular utility in explaining and predicting tolerance of lesser acts of violence and aggression by patients in non-institutional healthcare settings. In summary, broken windows theory will be utilized in this case to examine the type and severity of the form of abuse and the impact of such on incident reporting.

Theory of Reasoned Action

The theory of reasoned action, developed in the social psychology arena, offers a foundation to explain and predict intentions of conducting a behavior when choosing among alternatives for a single behavior (Randall & Gibson, 1991; Sheppard, Hartwick & Warshaw, 1988). As intentions to perform behaviors are of high utility in predicting the behavior (Nabi, 2009), the theory of reasoned action promotes understanding providers' intent and therefore predicting their action.

The theory, developed by Ajzen and Fishbein (1975, 1977, 1980), postulates that it is an individual's attitude towards a behavior and the social norms surrounding that behavior which may explain and predict that individual's intention to complete the behavior. Attempts to explain a victim's behavior have been well studied in the fields of psychology and criminology, and it is from these fields that much of the research on this topic stems (Gartner & MacMillan, 1995; Garcia & Herrero, 2006; Pfeiffer et al, 2010). Examination of attitudes and social norms toward patient abuse and aggression towards the non-institutional healthcare provider, however, warrants further exploration in this chapter.

The founders of the theory of reasoned action acknowledge that any observable behavior may be caused by a variety of factors. A simple example of this is offered by Ajzen & Fishbein (1975) as a woman who laughs at a joke told by her husband. The possible causal factors for her laughter could be that the joke itself was indeed funny; the woman may have been seeking to please her husband thus she laughed; it may be that the woman's husband was funny himself and

very good at the delivery of the material where she laughed at his delivery rather than the joke. The question postulated by Ajzen and Fishbein is, which of these factors is the cause of the behavior. These authors assert that

“an actor’s behavior can usually be attributed to a large number of causal factors. If the only information available to the observer is the fact that the actor has performed the behavior in question, causal attribution may be quite difficult. Frequently however the observer will have additional information about the actor, the behavior and the conditions under which the behavior was performed.” (Ajzen & Fishbein, 1975, p.265).

Additionally, “a person’s attitude represents his evaluation of the entity in question” (Ajzen & Fishbein, 1977, p.889). Therefore, in the example above, the additional information which is sought in the theory of reasoned action is to determine what the woman’s underlying attitude was towards laughing at her husband’s joke and what the social norms were, as perceived by the wife, which influenced her behavior.

Clearly the theory of reasoned action suggests that there are several alternatives which may explain an observable behavior: characteristics of the individual performing the behavior (something about the actor), characteristics of the behavior (the object), characteristics about the specific situation (the circumstances), and a combination of the actor, object and circumstances (Ajzen & Fishbein, 1975, 1977). These factors however are influenced by the perceived freedom to perform a behavior, the actor’s attitude towards the behavior, the social desirability of that

behavior, and the contrast between the attitudes towards performing a behavior and the social norms towards doing so (Fishbein & Ajzen, 2005; Fishbein & Yzer, 2003). Exploring this relationship further, Ajzen and Fishbein (1977) suggest that while an individual's attitude towards an object does influence their response, their attitude alone is not sufficient to predict any given behavior. These authors suggest that it is the intention to perform a behavior that is the best predictor of performance of the behavior, and that "the intention is a function of [the actors] attitude towards performing the behavior and [the actor's] subjective norm" (Ajzen & Fishbein, 1977, p. 888). Recent studies have also supported this link, indicating that "real behaviors are well predicted by behavioral intentions if those behaviors are under volitional control" (Nabi, 2002, p. 430).

As these attitudes and social norms are thus determined critical in establishing an actor's intention to perform a behavior and prediction of that behavior, thus a definition of these constructs becomes necessary. In the theory of reasoned action, attitudes include beliefs towards an outcome and an evaluation of the outcome. Subjective norms include beliefs about what others think and the internal motivation to comply with what others think (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975; Hale, Householder, & Greene, 2002; Vallerand, Deshaies, Cucrier, Pelletier & Mongeau, 1992). Attitudes and behaviors are viewed as being composed of four elements: the action, the target where the action is directed, the context of the action and the time of the action. Ajzen and Fishbein (1977) thus assert that any single observable behavior consists of an action performed towards a target in a particular context at a particular time.

The theory of reasoned action postulates that the decision and intent to perform a single behavior is based upon the attitudes and societal subjective norms associated with the behavior (Ajzen, 1991; Ajzen, 2001; Nabi, 2002; Pfeiffer et al, 2010; Sheppard et al, 1988). Examining solely voluntary behavior, it is the individual's personal attitude towards the behavior and thoughts about how other people would view their behavior (societal norms) which explain and predict the occurrence of the behavior. It is suggested that use of an individual's attitude to predict behavior is based upon constant factors. As Ajzen and Fishbein (1977; 2004) argue, when an individual holds a positive attitude towards performing a behavior, it is expected they will perform that behavior. Similarly, when a person holds a negative attitude towards performing a behavior, they are expected not to perform that behavior. The theory of reasoned action predicts behavior using the assumption that individuals behave rationally, thus intent to perform a behavior is "based on the assumption that human beings are usually quite rational and make systematic use of the information available to them [and] that people consider the implications of their actions before they decide to engage or not engage in a given behavior" (Ajzen & Fishbein, 1980, 5).

Clearly attitudes are a key element towards predicting behavior, however social norms towards such a behavior also play a key role. While these elements are both crucial, attitudes and societal norms do not always have equal contributions to the reasoned action (Davis, Mateu-Gelabert, & Miller, 2005). Indeed, while both social norms and attitudes have been found to predict individual's intentions to report incidents, some studies suggest that the subjective norm

attributed to the behavior carries a heavier weight in the decision process than does the attitude about reporting (Ellis & Arieli, 1999). The theory of reasoned action will be utilized to examine how patient and provider characteristics impact incident reporting.

Application of Theories

Evident from the literature review in the proceeding chapter, patients perpetrating violence against a healthcare provider is not an unusual occurrence (Campbell et al, 214; Franz et al, 2010; Hinson & Shapiro, 2003; Janocha & Smith, 2010; Kingma, 2001; Smith-Pittman & McKoy, 1999). Use of the aforementioned theories is of utility to explain and predict the impact of patient characteristics, provider characteristics and the form of abuse and aggression and the contribution of each to the providers reporting or failing to report incidents of abuse or violence.

Stress Theory & Provider Characteristics

Stress theory offers a parsimonious and falsifiable framework for understanding and explaining the phenomenon of healthcare staff's perception of client violence. Violence as a stressor is well reviewed in the literature, with studies suggesting that life stressors require support to mediate the negative responses of stress (DeLongis et al, 1988; Lazarus, 1990b; Watson & Tellegan, 1989). Stress theory has been utilized extensively in the domestic violence literature to examine the constructs of victim/perpetrator relationships and attributions as well as acting violently in reaction to a stressor (Carlson, 1990; Farrington, 1986).

Currently, little is understood regarding the variability of a healthcare provider's response to acts of violence or aggression from patients. While the literature review in the proceeding chapter does illustrate that some providers do report such incidents, a far greater number do not (Taylor & Rew, 2010; Valdez, 2010; Winstanley & Hales, 2008). To develop a model to both explain and predict this discrepancy, stress theory is of utility. Using this framework, a patient's act of aggression or violence towards the healthcare provider in the non-institutional healthcare setting would be viewed as the stressor and an impact on the provider's attitude and response toward the incident.

In this case, being victimized by a patient is in this case is conceptualized as the stressor to healthcare providers. Stress theory helps to explain and predict how a healthcare provider will react to a stressful event, such as when patient aggression or violence towards a provider is the stressor. Lazarus (1990a) asserts that stress theory acknowledges the individual's personality traits as mediating factors in the stress response. Interestingly, in non-institutional healthcare settings, researchers have found that the environment impacts the stress response (Moos & Swindle, 1990). One of the founders of stress theory finds that 'unpredictable environmental conditions [affect] the processes of appraisal and coping' (Lazarus, 1990a, p42). Barling et al (2001) have also utilized a stress theory approach to gain insights into the organizational and personal consequences of client violence in the healthcare field. Their findings indicate that abuse of home healthcare staff (regardless of discipline) resulted in not only decreased quality, but also decreased quantity of work performed. As such, it is hypothesized that there are characteristics inherent in the provider which will impact their ability to process and cope with

the stress of patient violence and aggression, which in turn may impact their reporting, or failing to report, such an incident.

Bussing and Hodge (2004) note that healthcare providers serving patients ‘behind closed doors’ are without the social support of colleagues and supervisors as found in other healthcare settings. This lack of perceived social support increases the severity of the stress from the patient violence or aggression and results in a more negative attitude towards and experience of the incident (Barling et al 2001; Bussing & Hodge, 2004). These findings were supported by two additional studies, a mixed-methods study conducted Fazzone et al (2000) and a quantitative study by Galinsky et al (2010). Both of these studies find that there are discrepancies in discipline, experience, and perception of safety based upon the social support perceived by the healthcare provider.

Broken Windows Theory & Severity of the Incident

While stress theory clearly offers explanatory and predictive functions regarding provider’s experience with and exposure to violence and aggression, it fails to offer a parsimonious or falsifiable framework for exploring the severity of the incident and the impact of such. Policies which encourage incident reporting have been found to be one means to discourage future episodes of patient violence and aggression (Campbell, 2014b). Extrapolating from these findings, when examining specifically the form and severity of violence, reporting forms of abuse such as verbal threats and verbal harassment may decrease the escalation of such events to physical violence.

Broken windows theory thus becomes of utility to explain and predict that an exacerbation of aggressive incidents from verbal non-violent to violent incidents will indeed occur. Consistent with the aforementioned findings, the theory predicts that as incidents go unreported, the severity of incidents will increase (Hesketh et al, 2003). Hesketh et al. (2003) argue that as healthcare providers tolerate verbal assault and threats of assault from patients, a greater likelihood exists that violence and aggressive acts towards these providers in these settings will increase in severity, as the perpetrator sees no consequences to their actions. Additionally, the meanings that providers ascribe to patient violence and the social norms of such are influenced by the severity of the incident (Taylor & Rew, 2010). When verbal abuse and threats of physical assaults are tolerated in healthcare environments, more serious violence will follow (McPhaul & Lipscomb, 2004; McPhaul, 2005). According to researchers in this area, broken windows theory is critical for violence prevention strategies in the healthcare field and predicts that continued failure to report patient acts of aggression and violence will perpetuate further and more severe assaults (McPhaul, 2005; McPhaul & Lipscomb, 2003; McPhaul et al, 2010). The question then arises, once this abuse or violence has occurred, what are the factors that contribute to the provider deciding whether to report, or not report, the incident? Theories relevant to decision-making contribute to understanding of this behavior.

Theory of Reasoned Action & Incident Reporting

Stress theory speaks to attitudes about a behavior. Broken windows theory addresses social norms. Combining these two constructs, the theory of reasoned action offers a

parsimonious and falsifiable framework for explaining and predicting a healthcare provider's reporting or failing to report an incident of patient violence and aggression. In a systematic review examining barriers to incident reporting in the healthcare field, Pfeiffer et. al (2010) found utility in the theory of reasoned action in explaining and predicting incident reporting. While this review focused specifically on inpatient hospital settings and it did not differentiate form of incident (violence, medication error, patient injury, etc.), these authors found support for application of the theory of reasoned action. The theory of reasoned action would predict that a provider's attitude towards a violent or aggressive patient, and their attitude about incident reporting, in conjunction with social norms surrounding incident reporting, would both explain and predict a provider's reporting or failing to report the incident. Furthermore, for those incidents that go unreported, the theory of reasoned action would postulate that either the individual's attitude or the social norms regarding incident reporting were not in favor of reporting.

Examining attitudes of the provider towards incident reporting and attitudes of the provider towards the violent or aggressive patient are well explained through the use of stress theory, as articulated in previous sections of this review. Additionally, social norms regarding incident reporting are explained through broken windows theory. When combining these factors, the theory of reasoned action would suggest that for an individual health care provider to have the intent of reporting the violent or aggressive behavior, their attitude about the behavior would have to be extremely unfavorable and their attitude towards incident reporting would have to be

favorable to override any social norms against incident reporting as reviewed in the preceding chapter. However, should the social paradigm shift, whereby healthcare providers place their own safety issues and their own well-being equal to that of the patients under their care, the theory of reasoned action would assert that less weight would be placed on the individual provider's attitude towards the behavior.

Explanatory Model

Using the aforementioned theoretical approaches, an explanatory model has been developed to offer a specific predictive model for provider's subject to patient aggression or violence reporting or failing to report incidents (See Figure 1). The factors which are hypothesized to contribute to this model are characteristics of the provider, characteristics of the patient, and the form of abuse. The individual theoretical foundations reviewed are insufficient in and of themselves to offer a predictive model. However, when considered concurrently, stress theory, broken windows theory and the theory of reasoned action postulate a predictive model for identifying those factors which contribute to non-institutional healthcare providers reporting or failing to report incidents of patient violence and aggression perpetrated against the provider.

The theoretical review would suggest that use of stress theory explains and predicts that incident reporting, when conceptualized as a response to the incident, is impacted by characteristics of the provider exposed to the aggression and violence. The theory postulates that non-institutional healthcare providers with the ability to react to the stress response will be more capable of responding to incidents of patient aggression and violence, and therefore more likely

to report such occurrences. Use of this theoretical foundation leads to the hypothesis that providers who are exposed to violence and aggression report or fail to report such incidents are based upon the variables of provider age, years of experience and discipline. Additionally, use of stress theory proposes that patient characteristics may also contribute to the providers' response to the stressful event and therefore impact the providers reporting of the incident.

The impact of patient characteristics also has an impact through the provider's attitudes towards violence and the social norms regarding the acceptability of violence and incident reporting. As the literature review in the proceeding chapter suggests providers do not attribute culpability to patients who are perceived as vulnerable, the theory of reasoned action would predict that incidents perpetrated by patients who are deemed vulnerable would be less likely to be reported than those whereby providers assign culpability to the patient. It is therefore hypothesized that healthcare providers in non-institutional healthcare settings are less likely to file a report due to moderating characteristics of the patient: i.e., when the perpetrator is a patient with a diagnosis of dementia, acute health crisis, cognitive impairment, mental health diagnoses or under the influence of substances.

The patient perpetrating abuse and the providers' response to the exposure is also impacted by the social norms regarding violence and aggression in the non-institutional healthcare setting. Broken windows theory would postulate that the form of abuse perpetrated against the provider has an effect on the reporting of such. It is therefore hypothesized that verbal abuse and aggression are reported less frequently than acts of physical violence.

Additionally, physical abuse resulting in personal injury and loss of work time is reported more frequently than physical abuse or violence that does not result in these measurable outcomes.

In summary, the literature links the ability to react to stress events to the theory of reasoned action, as the existence of such may serve as indicators as to whether the individual may decide to override social norms against an action (Regis, 1988). This research utilizes broken windows theory to add to the dialogue regarding social norms and attitudes utilized in the theory of reasoned action and offers a predictive model for provider incident reporting. Suggesting that despite the social norms against reporting patient violence in the non-institutional healthcare setting, a predictive model for incident reporting may be offered using stress theory, social norms and provider attitudes as factors contributing to provider incident reporting. Additionally, provider characteristics, patient characteristics and the form of abuse will be examined within this research to explore this constellation of factors and the impact of each on incident reporting.

METHODOLOGY²

It is the goal of this research to assess factors which may impact healthcare workers reporting incidents of patient violence and aggression. This study examines the relationships between incident reporting and three domains of independent variables: form of violence/aggression, provider characteristics and patient characteristics. Specifically through examining incident reporting in non-institutional healthcare settings, this research evaluates the determinants of healthcare workers' reporting incidents of client violence. Data obtained through a cross-sectional survey of home healthcare workers is analyzed using descriptive statistical methods and multiple logistic regression to establish the relationship between the dependent and independent variables.

Research Question & Hypothesis

The overarching inquiry of this research aims to identify the factors which contribute to a healthcare provider's decision to report or fail to report their most recent encounter of patient acts of aggression perpetrated against healthcare workers providing services in non-institutional care settings. As such, there is one primary and three sub-questions that are examined in this study. The primary research question asks what are the factors that differentiate non-institutional

² Portions of this chapter have been published in the following:

Campbell, C., Burg, M. & Gammonley, D. (2015). Measures for incident reporting of patient violence and aggression towards healthcare providers: A systematic review. *Aggression & Violent Behavior*, 25(B), 314-322.

healthcare providers' reporting or failure to report their most recent encounter of patient violence/aggression perpetrated against them. The sub-questions are as follows:

- (1) Does the form of abuse or aggression perpetrated against the healthcare provider have on providers reporting the incident?
- (2) What are the characteristics of the healthcare provider that impact whether patient aggression or violence perpetrated against the healthcare provider is reported?
- (3) What characteristics of the patient perpetrating the assault or abuse impact the provider reporting or failing to report the incident?

Derived from the theoretical foundations of this study, the theoretically informed hypothesis of this study are as follows:

H₁: There is an association between the form of the most recent encounter of patient perpetrated aggression/violence and the provider's reporting incidents.

H_{1a}: Providers are more likely to file a report regarding acts of physical aggression/violence as compared to verbal aggression/violence.

H_{1b}: Providers are less likely to file a report regarding sexual aggression as compared to verbal aggression/violence.

H₂: Provider characteristics impact incident reporting of their most recent encounter of patient perpetrated aggression/violence.

H_{2a}: Younger providers are more likely to report incidents as compared to older providers.

H_{2b}: More experienced providers are less likely to report incidents as compared to less experienced providers.

H₃: Characteristics of the patient who perpetrated the most recent assault impact providers' reporting their most recent encounter of patient perpetrated aggression/violence.

H_{3a}: Healthcare providers are less likely to file a report when the perpetrator is a patient with a diagnosis of dementia or cognitive impairment.

H_{3b}: Healthcare providers are less likely to file a report when the perpetrator is a patient with a mental health diagnosis.

H_{3c}: Healthcare providers are more likely to file a report when the perpetrator is a patient with a diagnosis involving active substance use or abuse.

H_{3d}: Healthcare providers are less likely to file a report when the perpetrator is a patient experiencing an acute medical condition.

Variables

While the measurement and coding of each variable will be examined in the following sections of this chapter, operationalization of each variable in the aforementioned hypotheses is

warranted. The dependent variable in this study is a dichotomous representation of providers reporting of their most recent encounter/incident of patient perpetrated aggression or violence. This variable will be operationalized as “was it reported” with a dichotomous response of Yes or No.

The independent variable form of aggression is operationalized as the type of abuse or violence perpetrated against the provider. Consistent with the operationalization of these constructs as defined by Campbell et al (2015), for the purposes of this study, the forms of aggression considered are being categorized as verbal violence, physical violence and sexual violence. Note that as self-report is being utilized to capture this construct, the occurrence of each form of violence is dependent upon the provider’s perception. Verbal violence is operationalized as aggression that includes yelling, screaming, verbal threats of physical harm and verbal statements resulting in the provider feeling threatened or unsafe. Physical violence is being operationalized as being touched in a way that results in feelings of being unsafe, being hit, grabbed, and punched and/or spat at. Sexual violence is operationalized as physical or verbal acts which resulting provider feeling the act is sexually inappropriate.

Provider characteristics include age (divided into age groups) and years of experience (also divided into categorical ranges of years). Age will encompass the following categorical values: 20-29, 30-39, 40-49, 50-59, 60-69, and 69+. The independent variable of years of experience working in healthcare field will be similarly categorized as follows: less than one year, 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21+ years. While interval data is possible

for those variables of age and years of experience, these variables have been transformed into categorical variables to ensure that individual respondents remain anonymous. Additional descriptive demographic information was obtained regarding the healthcare providers. These factors include gender, provider discipline and providers' education level. Gender will be divided into two categories of male or female. Provider discipline will be grouped into the categories of licensed practical nurses (LPN), registered nurses (RN), advanced registered nurse practitioners (ARNP), licensed clinical social workers (LCSW), occupational therapists (OT), dietitians, medical doctors (MD), psychologists (PsyD & PhD), pharmacists (PharmD) and other. Finally, education level will be categorized as high school diploma/GED equivalent, associate's degree, bachelor's degree, master's degree and doctoral degree. Patient characteristics are operationalized in the form of four dichotomous variables: patient diagnosis of dementia or cognitive impairment, mental illness, substance use or abuse, or acute medical illness.

Methods

Design

This study employs a non-experimental cross-sectional survey design. As aforementioned, one goal of this research design is to identify factors that predict whether acts of patient violence and aggression against healthcare workers in non-institutional care settings are reported. Additionally, this study aims to address when incidents are not reported, what factors contribute to this failure to report incidents of violence. Data collection occurred through

anonymous voluntary self-administered surveys of non-institutional healthcare providers. Data collected through the survey was housed in an encrypted, password-protected database accessible only to the researcher. The research protocol was approved by the Institutional Review Board at the University of Central Florida as well as the University of Florida Institutional Review Board (IRB-01), utilized by the North Florida/South Georgia (NFL/SG) Veterans Health Administration (VHA).

Design Validity

Due to this study being cross sectional, it is necessary to evaluate for threats to the study design to ensure that conclusions drawn regarding the study findings have validity. The primary concern for internal validity is the degree to which valid conclusions can be drawn about the effects of the independent variables on the dependent variable. The primary threat to survey research design is measurement, or the instrumentation threat, which will be examined in detail in the following section of this chapter. To enhance the external validity of this research, a multitude of settings have been selected to expand the generalizability of these findings. Additionally, the use of theory has been employed and a power analysis was conducted to expand the generalizability of findings beyond the specific agencies included and the VHA programs studied.

Measurement

Measurement is based upon self-report using a researcher-developed survey. The total survey includes 37-38 items and is divided into four sections. The first section on provider demographics included either four or five questions. The rationale for this variance is that those surveys including 4 demographic questions, thus 37 items, were those disseminated to VHA staff; the VHA office of Research and Development (R&D) mandated that an inquiry of gender be removed from the survey, as this was viewed by R&D as potentially an identifying feature within the survey. Surveys disseminated to all other samples, however, included 38 questions total, and the five demographic questions included the self-report of gender. The second section of the survey inquired about the provider's experiences regarding incidents of abuse and violence, including their most recent encounter of patient violence/aggression. This second section encompassed three elements. The seven main questions of this section examined exposure and form of abuse perpetrated. The eighth question within this section examined specifically the most recent exposure and form of abuse. The sub questions under each of the eight main questions explored whether the incident was or was not reported and the characteristics of the patient perpetrating the abuse. The third section of the survey encompassed one closed ended and one open ended question of the survey, exploring provider's knowledge of incident reporting procedures within the agency where they are employed. Finally, the fourth section allowed for an open ended response for any other information the respondent would like to share on the topic (see Appendix A: survey).

In order to pilot this survey, a focus group was employed, consisting of six healthcare providers with a multitude of experiences providing healthcare in non-institutional care settings. This group consisted of an ARNP, a LPN, a MD, a RN with a masters in nursing and a PhD in nursing education, another RN and an OT. Regarding the expertise of each member of the focus group, the ARNP has been working in the field in excess of 15 years and is currently employed providing primary care services to chronically medically complex patients in the home setting. The LPN, also having a master's degree in science, has worked for greater than 10 years in homecare settings, providing custodial care and LPN home health care services in patient homes. The MD in this focus group has a specialty in pain and symptom management and has been working in the home care setting for chronically ill and terminally ill patients for 15 years. The RN/PhD in this study worked in home health and hospice care for 10 years before leaving home healthcare and now working as a nurse educator and researching issues of healthcare staff burnout. The OT in this group has 17 years of experience working primarily in home healthcare as a skilled therapist for patients recently released from the hospital to receive rehabilitation in their homes. Finally, the RN in this group is recently retired, after 35 years working in the nursing field some of which was in the homecare setting as well as experience in the hospital setting.

As the result of the focus group, several additions and changes were made to the original researcher developed instrument. The two most significant changes in the instrument occurred in the second section of the survey, most notably regarding reporting the incident. While the initial

survey measured incident reporting as a dichotomous variable (Yes/No), a third category was added, to clarify when the incident was not reported, was it due to the lack of reporting mechanism. While the present study will utilize only the dichotomous Yes/No responses, it was the determination of the focus group that including a response option of “No, due to no reporting mechanism” will allow for future research to be conducted examining this component. The second significant change to the survey was an added category of patient characteristics, adding the category of acute medical illness to the patient diagnoses. Another result of this focus group is that an additional survey sub-question was added under each of the seven questions in Section II of the survey, namely question x.1, inquiring how many times each form of abuse or violence was perpetrated against the non-institutional healthcare provider. While this is not a variable hypothesized to contribute to the providers reporting or failing to report incidents of patient violence or aggression, the addition of this question allows for added data to be collected regarding prevalence of each form of incident(s). Aside from this question, each question of the survey in Section II is either collecting demographic information or directly linked to a hypothesis of this research study.

Measurement Validity & Reliability

A systematic review of measurement and incident reporting found that the majority of instruments utilized to examine provider incident reporting of patient perpetrated violence and aggression are researcher developed for specific studies (Campbell et al, 2015). This is similarly the case for the instrument utilized in this study, and therefore an exploration of the validity of

this measure is warranted. To ensure that the instrument as developed does indeed have face validity and content validity, consistent with the other measures employed in the literature, a focus group was utilized in development of the instrument, as described in the preceding section of this chapter. Conclusion validity, determining if the measurement is precise enough to detect the effect, is a function of having reasonable evidence, sufficient power, and sufficient co-variation. This will be examined further in the statistical analysis section of this paper.

To ensure construct validity, the form of violence/abuse perpetrated is measured with multiple questions, to ensure the constructs are being fully captured and there is no confounding of constructs. There are two or three questions each examining physical violence and verbal violence to ensure no elements of those constructs are excluded. There are two significant threats to construct validity, however, that warrant further examination in this case. As the primary inquiry of this study is incident reporting, it is possible that respondents will attempt to make themselves look good, or that they ‘do what they are supposed to do’ and thus will declare that they did report instances, when in fact they did not. This would be an example of potential desirability bias. The final threat to measurement validity requiring exploration with this measure is the element of criterion validity, which validates the instrument against external criterion. Problematically, the majority of measures utilized to examine provider’s incident reporting are not well studied or standardized, thus making validation against external criterion impossible in this case. Regarding measurement reliability, as the survey is completed by respondents themselves, no issues arise related to inter rater reliability.

As measurement error is an issue with data collection via surveys, this issue warrants investigation. Regarding measurement error, as measurement of the phenomenon under investigation employs predominately researcher developed instruments (Campbell et al, 2015), this element must be examined further in the limitations of this study and is also discussed in the following sections of validity and reliability of the measure.

Sample

To ensure that the sample is large enough for results to have external validity, a power analysis was conducted to determine minimum necessary sample size. As having experienced an incident of patient violence and aggression is necessary for ability to report incidents, a large sample size is required to ensure inclusion of an adequate number of respondents who have experienced the phenomenon under investigation. A function of effect size, alpha and statistical power, a power analysis indicates that with a 5% margin of error and a 90% confidence level, and $\alpha=.05$, dependent upon the calculator used, the target sample size requires approximately 164 respondents having experienced one of the forms of patient violence or aggression (Calculator, 2015). To determine target sample size for this study, an extremely conservative estimate was made that approximately 60% of providers within the total sampling frame of providers have experienced such an incident (Barling et al, 2001; Magin et al. 2008; Ringstad, 2005), the target goal developed was $N= 275$. The unit of analysis and unit of measure for this study are the same, the individual provider.

Sample Recruitment

The participants for this study were recruited using a cluster sampling methodology, with sampling from six distinct sites: two within the Veterans Health Administration (VHA) and four from local community organizations. The first sample was obtained from a population including all home care providers under the VHA Housing and Urban Development/Veterans Health Affairs Partnership (HUD/VASH) within North Florida/South Georgia (NFL/SG) VHA. Recruitment criteria for sampled staff within this group were those staff employed by the VHA whose job description includes at least .5FTE of routine non-institutional care services and who are present at the mandatory all staff monthly meeting held by the NFL/SG service on August 12, 2015.

The second VHA sample site included home care staff from the Geriatrics and Extended Care service line employed by the NFL/SG VHA. Recruitment criteria for sampled staff within this site were the same as that for HUD/VASH sample; those staff employed by the VHA whose job description includes at least .5FTE of routine HBPC services and who are present at the mandatory all staff quarterly meeting held by the NFL/SG service on October 29, 2015. Within HBPC, 34 employees completed the survey. Disciplines included in the sample include ARNPs, LCSW, dieticians, OTs, PsyDs, PhDs and MDs. While the literature includes home health aides as another home based discipline impacted by incidents of patient aggression and violence, this discipline is not included in either VHA samples, as the VHA does not directly employ home health aides as part of any non-institutional care program.

The third sample was obtained from a population including all employees of Cornerstone Hospice of Lake and Sumter, Inc. The director of social services at Hospice indicated that the total number of clinical care employees at the time of this study was 354. However, it was unclear how many of these employees met the inclusion criteria for this study of staff employed at least .5FTE. Additionally, it was unclear how many of these staff were clinical care staff as opposed to administrative and support staff. Thus the total number of employees in this sampling frame was unable to not accurately ascertained. The agency approved dissemination of the survey at the nursing staff meetings and at interdisciplinary staff team meetings during the month of September, 2015. Seventy-two completed surveys were returned from this site.

The fourth sample site included clinical staff employed at Advanced Nursing Concepts (ANC) home healthcare agency in Tavares, FL, with 13 potential participants. This sample was obtained during a staff meeting on August 27, 2015 and recruitment criteria are similar to above. The fifth site was also a community home health agency, Kindred at Home, located in Ocala, FL, with 15 potential respondents. This sample was obtained during a staff meeting on November 12, 2015. Each of these sites allowed for data collection during a weekly interdisciplinary team meeting, lasting for 1-3 hours in duration.

The sixth and final sub-sample was obtained from attendees at an annual conference hosted by Marion County Nurses Association (MCNA). At the conference, held October 15-16, 2015, similar recruitment criteria to the other samples sites was utilized; members of the Association and conference attendees who are employed at least .5FTE in the home healthcare

field and encompass one of the aforementioned disciplines. Twelve surveys were returned from this site.

Data-Collection

For the VHA samples, written permission was obtained by the NFL/SG VHA HUD/VASH and HBPC service chiefs and program managers to attend one all-staff meeting of non-institutional healthcare providers for each service. The NFL/VHA utilizes the University of Florida IRB-01, which approved this research as an exempt study. Permission was also required to be obtained from the three bargaining units within the VHA and this was obtained prior to dissemination of staff surveys within the VHA.

For collection of data from the VHA, during both the HUD/VASH and HBPC mandatory all staff meetings, at the beginning of the lunch hour, participants were afforded the opportunity to choose to participate and provided with an in person 5-minute introduction to the survey announcing the rationale and privacy information, specifically that all responses will be maintained anonymously and that the information within the surveys will be only accessible to the researcher. To ensure informed consent was obtained, respondents were reminded that the survey is completely voluntary and their completion of the survey implied informed consent. To ensure that anonymity was maintained, blank surveys were placed on a table in the room prior to this presentation, and respondents had the opportunity to complete the survey should they so choose. A receptacle was also placed next to the surveys in which respondents could deposit their completed surveys.

Data collection at Advanced Nursing Concepts, Kindred at Home, and MCNA followed the same protocol, with the same brief five-minute introduction to the survey and survey dissemination occurring through participants picking up a survey on their own volition and returning the survey to the collection receptacle within the room. The collection of data at Cornerstone Hospice, as aforementioned, varied only slightly from this protocol. Due to the method of survey dissemination permitted by the agency, surveys were delivered to the director of social services on August 27, 2015. The Director disseminated those surveys to team leaders and team managers, who then placed the surveys in the room next to a receptacle at all interdisciplinary team meetings and pool staff meetings during the month of September, 2015. Consequentially, this sample did not receive the five-minute presentation regarding the research and no direct contact was had with this PI and potential respondents.

HUD/VASH

At the HUD/VASH all staff meeting, the survey distribution occurred during an all staff meeting in excess of 100 HUD/VASH employees. The program manager of HUD/VASH reported that there were 66 clinical homecare providers in this group. An announcement was made during this meeting as described above, as well as participation criteria for inclusion in sampling frame, requesting only non-institutional clinical patient care staff participates, excluding any administrative staff and staff working in the domiciliary (institutional setting). Out of an estimated sampling frame of 66 potential respondents, 61 surveys were picked up, of which 35 completed surveys were returned. Disciplines included within this sample included

licensed clinical social workers, dieticians and registered nurses. The response rate of this sample, estimated due to estimated sample frame, was 53%.

HBPC

For data collection at the HBPC all staff meeting for a full day on October 29, 2015, a similar announcement was made regarding the purpose of the study and inclusion criteria. The program manager of the HBPC group indicated that there were 51 staff members at this meeting that were eligible respondents. In this group, 50 surveys were picked up, of which 34 were returned. The response rate for this sample was therefore 66.67%. Disciplines included were licensed clinical social workers, occupational therapists, dieticians, physicians, psychologists and advanced registered nurse practitioners.

ANC

For data collection from ANC, a similar method was employed, however the meeting was anticipated to last one hour in duration, thus presentation of the study occurred at the beginning of the meeting and surveys were collected at the conclusion. At the time written permission was obtained from ANC, it was estimated that there would be 20 possible clinical homecare staff to participate in this survey. However, as of the date of data collection, the agency had downsized, resulting in 13 clinical care staff present at the time of data collection (two clinicians were reportedly not in attendance). Out of a total possible 13 respondents, there was a 100% response rate from this sample. Disciplines included in this sample included RN, LPN, one LCSW and PTA (physical therapy assistants).

Kindred at Home

Similar to ANC, data was collected from Kindred at Home during an interdisciplinary team meeting, anticipated to last two to three hours in duration. Therefore, presentation of the study occurred at the beginning of the meeting and surveys were collected at the conclusion. At the time written permission was obtained from Kindred, it was estimated that there would be 20 possible clinical homecare staff to participate in this survey. At the time of data collection, 15 employees were in attendance at the meeting, resulting in 15 clinical care staff present at the time of data collection. Of a total possible 15 respondents, there was a 100 % response rate from this sample. Disciplines included in this sample included nurses and both occupational and physical therapists.

MCNA

A similar method of data collection was employed at the MCNA site. At the beginning of the two-day conference, lasting from October 15, 2015 to October 16, 2016, a five-minute presentation was provided to attendees, as to had been conducted at other sites regarding study purpose and inclusion/exclusion criteria for participation in the study. Surveys had been delivered to the MCNA registration prior to conference opening. The PI did not remain at the conference for the two days, leaving after the presentation and returning at the end of day two to collect the completed surveys. The conference had 106 attendees on the first day and 108 attendees on the second day. The president of the MCNA estimated that 50% of attendees on each day were nursing students, thus excluded from study participation due to inclusion and

exclusion criteria as listed previously. Of the estimated 53 potential eligible respondents, it is unknown how many of the conference participants had experience providing healthcare services in non-institutional settings, as opposed to working solely in institutional care setting such as hospitals and nursing homes. As based upon conference registration data it is not possible to determine how many attendees were eligible for study inclusion, consequentially response rate is unable to be accurately determined. Furthermore, while 100 surveys had been delivered, the blank surveys which were not picked up were unable to be located at the end of the second day of the conference. Disciplines included in this sample were primarily registered nurses (n=12) and others not specified (n=2). In total from this site, seventeen completed surveys were returned.

Cornerstone Hospice

As previously mentioned, data collection at Cornerstone hospice varied, due to the method of dissemination of the survey permitted by the organization. For this sample, while data collection also occurred through pen-and-paper surveys, it was not done after a brief presentation by the PI at an all staff meeting. For this sample site, the director of social services disseminated surveys to team leaders, who then followed the research protocol as discussed above. Team leaders placed the surveys and receptacles in the room during nursing pool staff meetings and at IDT meetings. Team administrative personnel then collected the staff surveys in sealed receptacles at the end of their team meetings, and returned sealed receptacles to the director of social services. The PI then picked up all completed surveys from the director of social services

in their respective sealed containers. Disciplines included social workers, nurses, physicians and unspecified others. In total, 104 surveys were collected from this site.

STATISTICAL ANALYSIS

Upon completion of data collection, the total number respondents was N=218 and of those, 213 were complete enough to allow for statistical analysis and examination resulting in functional N=213. Among those included, 79.4% (N=169) had experienced patient violence or aggression and were therefore eligible for inclusion in the following analysis.

Data Management

As all of the variables being examined within this study are categorical, prior to a discussion of statistical analysis, it is necessary to examine how the survey responses will be coded to allow for data analysis to occur.

Coding of Variables

To allow for descriptive analysis, all responses required coding as described in the methods section above. Examining the dependent variable, regarding reporting of the most recent encounter of patient violence and aggression, respondents who indicated that they had reported the most recent form of abuse (response “Yes”) were initially coded as 3. Respondents who indicated No (no mechanism exists) were coded as 2 and respondents indicating that they did not report this most recent form of abuse, yet mechanism for reporting does exist, these were coded as 1. As the goal however was to ultimately conduct logistic regression, these responses

were recoded into a dichotomous yes/no variable, combining all “No” response and recoding these as 0, and recoding reporting of most recent form of abuse as 1.

Examining the independent variable regarding the most recently experienced form of patient violence and aggression, responses to survey question number eight, specifically examining this domain, were also coded to allow for analysis. For survey question eight, those respondents who indicated verbal abuse was the most recent form were coded as 1. Similarly, responses to this question indicating that physical violence was the most recently experienced form of abuse were coded as 2 and sexual abuse as the most recently experienced form of abuse were coded as 3. Regarding the remaining survey questions in Section II of the survey, which was designed to ensure each of the forms of violence was adequately captured, further coding was required (see Table 1). The survey encompassed three questions (questions one, two and four) which examined verbal violence. Responses in the affirmative for any of these questions were coded as 1 for verbal violence. Similarly, for the three questions that examined physical violence, questions three, five and seven, all examine physical violence and a response of “yes” to any of these questions was coded as 2. A response in the affirmative for question number six, capturing sexual violence, was coded as 3. These responses were then recoded to represent two dummy-coded variables with verbal aggression serving as the referent group.

For the independent variable patient characteristics, which was examined under each of the survey questions in Section II of the survey, respondents who indicated that none of the diagnoses listed were coded as 1. When respondents indicated that the patient diagnosis was

dementia or cognitive impairment, these were coded as 2. For the primary patient diagnosis of mental illness, these responses were coded as 3, substance use/abuse as the diagnosis was coded as 4 and responses that the patient was experience an acute medial illness were coded as 5.

Regarding the individual variables encompassed in provider characteristics, specifically discipline, age, education level and years of experience, each required coding as well (again, see Table 1). As age is an ordinal level variable, respondents who identified their age range as 20-29 were coded as 1. Respondents identifying their age range as 30-39 were coded as a 2, respondents with ages 40-49 were coded as 3, ages 50-59 were coded as 4, respondents ages 60-69 were coded as 5, and respondents over the age of 69 were coded as 6. Regarding gender, respondents who indicated their gender as male were coded as 0 and respondents indicating their gender of female were coded as 1. Provider education level, as a nominal level variable also required coding for analysis. Respondents indicating their current education level being a high school diploma or GED were coded as 1. Respondents with an associate's degree were coded as a 2, those with a bachelor's degree were coded as 3, respondents with a master's degree were coded as 4, and finally those respondents indicating they had a doctoral degree were coded as 5. Regarding the provider discipline, these responses were grouped into categories of primary discipline. Respondents who indicated they identified as an RN, LPN, or ARNP were all grouped into the nursing discipline and coded as 1. Individuals identifying themselves as LCSWs, occupational therapists, dieticians, psychologists and pharmacists were all grouped into the category of auxiliary clinical services and coded as 2. Those respondents who identified

themselves as either MDs or psychiatrists were grouped into the doctor's category, and were coded as 3. As these are nominal level variables, these groups were then recoded to represent three dummy-coded variables, with nursing serving as the reference group. Finally, regarding the variable years of experience, as ordinal level variables, no dummy coded variables were required, thus years of experience of the provider were coded as 1 for respondents having less than one year of experience, 2 for providers having 1-5 years of experience, 3 for providers with 6-10 years of experience, 4 if the years of experience was reported as 11-15 years of experience, 5 if the provider reported having 16-20 years of experience and 6 if the provider reported having 21 years of experience or more.

Management of Missing Data

While the majority of surveys returned were completed in their entirety, there were some surveys returned which were only partially complete. As such, each survey was coded as 1=Fully Complete, 2=50%-99% Completed, 3=<50% complete to determine the relative utility of each survey response. Within the HUD/VASH sample of thirty-five returned surveys, twenty-seven were fully completed, seven were coded as 2 and one was coded as 3. In the HBPC sub sample 21 were coded as 1, 13 were coded as 2, and 0 were coded as 3. Within the ANC sub sample, one survey was coded as 3, six were coded as 2, and six were fully completed. Within the Kindred Home Care sub-sample, 15 surveys were received, six were coded as 1, nine were coded as 2 and none were coded as three. In the Cornerstone Hospice sample of 104 completed and returned surveys, forty-seven were coded as fully completed, fifty-four were coded as 2, and

3 were less than 50% complete. Among the MCNA sub sample, thirteen were coded 1 as fully complete and 4 were coded as 2 being 50-99% completed; there were no surveys within this group coded as 3. In total, only 3 surveys were unable to be used due to being incomplete regarding the dependent variable of question number 8.

Regardless of completion level, however, prior to discussing how the missing data was managed, it is first relevant to examining the missing data for each of the variables in this study. For the total 218 surveys received, three survey respondents (1.4%) did not identify their discipline. Regarding respondents' age range, three respondents (1.4%) also failed to answer this question. Only one respondent (0.5%) did not identify their education level. The question regarding gender was answered by 137 respondents, and 89 respondents did not answer this question. The caveat to interpretation of this information, is that 69 of these missing 89 were VHA surveys where the survey question regarding gender was not included due to requirements of the IRB to ensure confidentiality of respondents. All 218 survey respondents did identify their years of experience, and there was no missing data for this question. Examining only the 169 surveys which were included in this analysis, where the completion level was 50% or greater (that is coded as 1 or 2), and where any form of patient violence or aggression as experienced, within this group, two survey respondents (1.2%) did not identify their discipline, one (0.6%) did not identify their age, and one respondent (0.6%) did not identify a patient diagnosis. Within this subset, gender was missing for 70 surveys, of which 67 were VHA surveys where gender was not included.

To allow for statistical analysis, there were multiple means of dealing with the missing data. Rather than replacing missing values with the mean or mode, which has the potential to significantly distort the results of analysis (Trochim & Donnelly, 2008), surveys which were coded as 3 (n=5, 2.5%) were excluded due to missing significant amounts of data which would allow for either descriptive or statistical analysis. Of the initial 218 surveys received were coded as one or two and 213 were able to be utilized and included in the following statistical analysis. For those surveys which were coded as a 2, and were complete excluding question number 8, examining the most recent form of abuse experienced, and when only one form of abuse was reported in Section II of the survey, the response for that form of abuse was utilized as the most recent form of abuse for the purposes of data analysis and examination of the dependent variable. Furthermore, when a variable was missing, the statistical software utilized eliminated the individual case from the analysis for that particular variable. For those respondents who failed to complete question number 8, yet had responded in the affirmative to more than one of the other forms of abuse in questions one through seven of the survey, the form of abuse that was experienced with greater frequency was used as the most recent form of abuse; this was the case with 3.4% of the surveys.

Analysis

Survey responses were coded and stored in encrypted, password-protected database accessible by the researcher and analyzed using SPSS 21.0 for Windows (IBM Corp, 2012). Once the data was collected, the analytical methods focused on the creation of a descriptive

profile of each sub-group sample and the overall sample. Nominal variables, to include form of abuse and provider discipline and patient diagnosis, were analyzed through calculation of frequencies and percentages. Ordinal level variables, including provider age and education level, were assessed through calculation of mode and standard deviations and review of distribution graphs.

Descriptive Statistics

The first analysis conducted was to examine descriptive statistics for the final sample (see Table 2) that met inclusion criteria for this study, those 169 surveys in which providers had experienced a form of patient violence or aggression. Regarding the demographics of providers completing this survey, directly linked to the variable of provider characteristics, for this nominal data frequencies and percentages were obtained. Eighty-one respondents were directly employed in the discipline of nursing (48.5%) followed closely by auxiliary services (N=60, 35.9%) and other disciplines (N=22, 13.2%), with a minimal number of doctors included in the sample (N=4, 2.4%). Data was missing for two respondents (1.2%) in this domain. For the ordinal level data of education level, the mode for education level among providers in this sample was a master's degree (N=81, 47.9%). Providers with an associate's degree included 44 respondents (26%). A lesser number of providers possessed a bachelor's degree (N=20, 11.8%), followed by a high school or GED equivalent education level (N=16, 9.5%) and then a doctoral degree (N=8, 4.7%). Information regarding years of experience among this sample was also gathered, and the mode years of experience in this sample was in excess of 21 years; 34.9% of providers (N=59) had

been working in the home healthcare field in excess of 21 years. There was a mostly equal distribution, however, amongst the other years of experience, with 23 providers (13.6%) having 1-5 years of experience, 30 providers (17.8%) having six to ten years of experience, 27 providers (16%) having 11-15 years of experience, and 28 providers (16.6%) having 16-20 years of experience. Only 1.2% (N=2) of providers completing the survey had less than one year of experience providing healthcare to patients in non-institutional settings.

Regarding whether the data is normally distributed for the first ordinal level variable of provider age, the data indicates that this is not the case (see Table 3). Normally distributed data will have a skewness value / skewness standard error and kurtosis value / kurtosis standard error value within the range of -2 to +2. For each age range, while the skewness ratio of value divided by error, the absolute value of each age range falls within the defined absolute value of 2 (20-30 = 0, 30-39 = 1.07, 40-49 = -.089, 50-59 = .97, 60-69 = -0.19). However, the kurtosis values exceeded the range of 2 to -2 for all age ranges excluding the range of 20-29 (kurtosis -1.93). For all other age ranges, kurtosis ratios are negative, indicating very short tails, much more so than that found in normally distributed data. Kurtosis values are as follows: 30-39 = -2.48, 40-49 = -3.03, 50-59 = -3.03, 60-69 = -2.54. Further evidence of this non-normal distribution is found through examination of the Shapiro-Wilk test, in that the null hypothesis that the data is normally distributed must be rejected, with all p-values being less than 0.05 (See Table 4). Consequentially, implications of this non-normal distribution is that tools assume normally

distributed data are contraindicated in this case. Only non-parametric tests are appropriate for this data. Fortunately, there are no parametric constraints with the use of logistic regression.

Similar distribution information was obtained for the ordinal level data of provider education level. Regarding the ordinal level data of provider education level, again this data is not normally distributed (see Table 5). Again, as was found with provider education level, while the skewness ratios were within the normal range of the absolute value of two, kurtosis ranges are again outside of the normal range for all education levels excluding doctoral degree (skewness 1.91, kurtosis 0). High school or GED education level skewness ratio is 0 and kurtosis ratio is -2.11. Associates degree similarly has a skewness ratio within the target value, -0.79, but kurtosis ratio at -2.86. A bachelor's degree education level has a skewness ratio of .86 and kurtosis value of -2.03. Master's degree education level has a skewness ratio of .47 and kurtosis ratio of -3.84. Similar findings exist when examining the Shapiro-Wilk test, in that the null hypothesis that the data is normally distributed must be rejected, with all p-values being less than 0.05 (See Table 6).

Distribution information was also obtained for the final ordinal level variable of provider's years of experience. Again, this data skewness ratios and kurtosis ratios (see Table 7), as well as the results of the Shapiro-Wilk test (see Table 8) all support the assertion that this data is not normally distributed. For providers with 1-5 years of experience, while skewness ratios (.58) and kurtosis ratios (-1.63) were within the absolute values of 2, Shapiro-Wilk testing again provided a significance level less than $p=.05$, requiring rejection of the null hypothesis that the

data is normally distributed and supporting the assertion that the data deviates from a normal distribution. Providers having between 6-10 years of experience also had a skewness ratio within the range of $-2/+2$ (skewness ratio .33) however the kurtosis ratio for this group was outside the target range for normal data, being -2.55. Again Shapiro-Wilk testing confirms this finding. Similar findings existed for the remaining ranges of years of experience: 11-15 years of experience, skewness ratio =1.17, kurtosis ratio -2.47, 16-20 years of experience skewness ratio .69, kurtosis ratio -2.40 and 21+ years of experience skewness ratio -.33 and kurtosis ratio of -3.91. In all of these cases, Shapiro-Wilk testing confirms the data is not normally distributed.

Regarding the nominal variable of the most frequently experienced form of the most recent episode of abuse, again frequencies and percentages are used to describe this data (see Table 9). The most frequent form of abuse was verbal abuse ($n=133$, 62.4%) followed by sexual abuse and physical abuse (both being $N=18$, 8.5%). Spearman rank correlation method is used to describe data that is neither interval nor ratio, as opposed to using Pearson's R which is for linear relationships. The Spearman Rank Correlation indicates that there is a non-parametric statistical significant dependence, albeit slight, in assessing how well the relationships can be described. Regarding reports of such incidents, greater than half of the respondents (52.1%) did not report this most recent incident, while 47.9% did report this occurrence (see Figure 4). Of those who experienced verbal abuse, more providers reported this form of abuse ($N=71$) than those who did not report this form of violence ($N=62$). Regarding physical abuse, experienced by 18 respondents, 12 did not report this occurrence, whereas six respondents did report the incident

(see Figure 5). Sexual abuse or violence, also experienced by 18 respondents within this sample, 77% (N=14) of providers did not report this form of incident, with only four respondents reporting this form of violence or aggression (see Figure 6).

Regression Model

Once all descriptive statistical analyses were obtained, regression was utilized to assess the significance of the effects of the independent variables. As it is the goal of this study to create a model that has a set of independent variables which provides an odds ratio of the occurrence of the dependent variable given a given combination of independent variables, and as the dependent variable is dichotomous, the most appropriate regression model to utilize in meeting the aforementioned goals is logistic regression. The assumptions which must be met to utilize logistic regression are threefold (Tate, 1998). First, it is assumed that the residuals are independent; this will be tested through visual examination of the residual plot. The second assumption is that the expected value of the error will be zero. Finally, we assume a lack of multicollinearity, which will be tested through use of the Durbin-Watson statistic, with a goal of having this statistic close to the absolute value of two. Again, normally distributed data is not an assumption with this non-parametric statistical test. In this analysis, the parameter we are looking for is the regression coefficient (β) and the p-value of β . β represents the relationship between x and y. Note that in logistic regression, the β coefficients produced by SPSS will be a log function. As such, interpretations will rest upon the odds ratios rather than the raw coefficients.

The residual plot (see Figure 3) supports the assumption that the residuals are independent. While there is not a test for the assumption that the expected value of the error is zero, as aforementioned it is possible to examine the data set to determine lack of multicollinearity. As discussed, with a goal of having the Durbin-Watson statistic close to the absolute value of two, analysis finds the actual statistic with this dataset to be 1.862, near the target value. Additionally, through examining collinearity statistics (see Table 10), with tolerance values being greater than 0.1, there is further support for the assumption that there is a lack of multicollinearity. Consequentially, there are no evident violations of assumptions which would preclude use of logistic regression in this study.

One issue, however which does arise, is the sample size being low and multitude of independent variables being examined (Pallant, 2010; Tate, 1998). The targeted anticipated logistic regression model prior to application of the data is as follows:

$y = \alpha + \beta(\text{age}) + \beta(\text{education}) + \beta(\text{experience}) + \beta(\text{physical}) + \beta(\text{sexual}) + \beta(\text{dementia}) + \beta(\text{mentalill}) + \beta(\text{substance}) + \beta(\text{acuteill}) + E$. However, to address the issue of sample size and multiple independent variables, avoiding potential problems with low sample size and low power, analysis was conducted in blocks, rather than overwhelming the model with the full hypotheses (Tate, 1998).

Despite this analysis being conducted in blocks, further discussion of how categorical variables are managed is warranted. Evident from the aforementioned logistic regression equation, to enable analysis of the variables which are nominal level variables, a reference group is required in these cases. Specifically examining the independent variable form of abuse, which

is a nominal level variable, verbal abuse was utilized as the reference group, and the β coefficient of physical and sexual abuse will be examined in comparison to verbal abuse. Following this initial analysis, a regression model was examined utilizing sexual abuse as the reference group to allow for a pairwise comparison between physical and sexual abuse. Regarding provider characteristics, age, education level and experience are all ordinal level variables, thus the use of a reference group is not required. However, for provider discipline, nursing is used as the reference group, and the β coefficient for the remaining disciplines will be examined in comparison to this group. As patient diagnoses are nominal level variables, yet patient diagnoses are not mutually exclusive, no reference group is required.

Again, while this study aims to ultimately develop one model to be of utility to explain the percent of people who can be successfully classified by the model, initial analysis is conducted in blocks so as not to overwhelm the model. The ultimate aim being calculation of an odds ratio to determine the effect of one variable on the probability of an incident being reported while controlling for the remaining independent variables. Following this plan, as aforementioned in the methods section of this study, nominal level data was recoded into dummy variables, however ordinal level data, such as provider age, years of experience, and education level were not recoded. Binary logistic regression, enter method, was then used to examine the model that was the focus of this analysis.

Form of Abuse

When examining the form of abuse, the variable of reporting of abuse was used as the dependent variable and the covariates were entered first with the recoded dummy variables of physical abuse and sexual abuse, using verbal abuse as the reference group (see Table 11). In this case, there is no significant difference in the odds of reporting physical abuse and the odds of reporting verbal abuse ($\beta=-0.813$, $p\text{-value}=0.125$). However, there is a statistically significant difference when comparing the odds of reporting sexual abuse and verbal abuse ($\beta=-1.372$, $p\text{-value}=0.021$). As the intercept (constant) is not statistically significant (0.120, $p\text{-value}=.490$), it is not added to the current bivariate model: $y=-1.372(\text{sexual})+E$. Good fit of the model occurs when the Hosmer and Lemeshow tests are insignificant, which is the case with this data set, with a $p\text{-value}$ of 1.00 (see Table 12). In the case of chi-square statistic, statistical significance is desired, with a $p\text{-value}$ is below 0.05. In this model, with a chi-square value of 8.224, with 2 degrees of freedom and a significance of 0.018, is indicative that there is indeed further support for this model (see Table 13). Additionally, the prediction value of this information is high, as Omnibus Test of model coefficients indicates that the model does perform exceptionally well, with a significance level of 0.018. Regarding the results of the Cox & Snell R^2 and Nagelkerke R^2 tests (see Table 14), these statistics may not be interpreted similar to linear regression; instead, they may be used as supplemental goodness of fit statistics, however statisticians are not unanimous in the interpretation of these (Peng et. al, 2002). An overall evaluation of the model may be determined by examining the improvement from the null model. Examining the

classification table in this regression analysis, the overall percentage of incident reporting accurately predicted is 57.1% (see Table 15), which is increase of 52.4% from the null model. The odds ratio (1/.254) suggests that providers are four times less likely to report sexual abuse in contrast to verbal abuse.

To examine a pairwise comparison of physical abuse and sexual abuse, the dependent variable of reporting of abuse was used and the covariates were entered first with the recoded dummy variables of physical abuse and verbal abuse, using sexual abuse as the reference group (see Table 16). The results of this analysis are consistent with those above, indicating that there is a statistically significant difference between reporting verbal abuse and sexual abuse ($\beta = -1.372$, $p\text{-value} = 0.021$) and there is no significant difference in the odds of reporting verbal abuse and physical abuse ($\beta = 0.560$, $p\text{-value} = 0.459$). Interpretation of these results suggests that the odds of an individual reporting verbal abuse ($\text{Exp}\beta = 3.944$) are almost four times greater than reporting sexual abuse. Again, with the Hosmer and Lemeshow tests, good fit is indicated as these tests are insignificant, with a $p\text{-value}$ greater than .05 (see Table 17). The Omnibus Test of model coefficients (see Table 18) suggests the model again performs well ($\text{chi-square} = 8.024$, $p\text{-value} = 0.018$). The model summary and classification tables remain the same as those in the initial logistic regression equation prior to pairwise comparison (see Tables 13&14). As the intercept (constant) is statistically significant (-1.253 , $p\text{-value} = .027$), it is added to the current bivariate model: $y = -1.253 + 1.327(\text{verbal}) + E$.

Provider Characteristics

Examining next the block with dependent variable of report of most recent form of abuse and the independent variables of provider characteristics, initially ordinal level covariates were examined first: this was done through adding the ordinal level covariates of age range, education level and years of experience. The logistic regression analysis indicates that none of these variables offered a statistically significant contribution to the model (see Table 19). To ensure this was not the result of overloading the model, the same analysis was run using one ordinal level covariate at a time, with similar findings of no statistically significant contribution by any of these factors. A separate regression model was created using the recoded dummy variables for provider discipline, using nursing as the reference group. While initially it appeared that there is a statistically significant impact of provider discipline (see Table 20) when examining the odds ratio of reporting among auxiliary services in comparison to nursing ($\beta=.669$, $p\text{-value}=0.044$); that the odds ratio suggests that auxiliary service providers are twice as likely to report patient perpetrated violence than nursing providers. Further exploration indicates that there is poor fit and there is not a statistically significant level of support for this model, with results of the Omnibus Test of model coefficients indicating the chi-square value of 5.05, with a significance of 0.168 (see Table 21). When combining these findings, to examine the entire block of provider characteristics (see Table 22), no statistically significant findings are apparent with this combination of independent variables.

Patient Characteristics

Similar to those findings with provider characteristics, when conducting a binary logistic regression using only the covariates of patient diagnoses, no statistically significant results are apparent (see Table 23 & Table 24).

Overall Model

Having examined each of the hypotheses individually, these findings were then combined (see Table 25). When adding form of abuse, provider characteristics and patient diagnosis to the equation together, the results indicate that sexual abuse remains statistically significant at the $\alpha=.05$ level ($\beta=1.425$, $p\text{-value}=.043$) and the various patient diagnoses and provider characteristics remain without statistical significance. Hosmer and Lemeshow Tests results (see Table 26) remain insignificant (chi-square, 6.632, $p\text{-value}= 0.577$). The overall prediction abilities of this model increased from 53.3% in the null model to 63.2%. However, combining all of these elements, as predicted (Tate, 1998) the model was indeed overwhelmed with low power, resulting in the overall model Omnibus Test of Model Coefficients (see Table 27) above the desired .05 threshold for significance (Chi-Square 20.398, $p\text{-value}$ 0.060).

SUMMARY OF FINDINGS

The data collected for this study and subsequent analysis are able to inform the primary research question of this study, namely, what factors contribute to a healthcare provider's decision to report or fail to report their most recent encounter of patient aggression or violence. The overall model suggests that healthcare providers in non-institutional care settings are four times less likely to report patient perpetrated sexual abuse/violence than verbal violence or abuse. However, as the overarching research question has previously been divided into three separate sub questions, each will be examined individually.

The first sub question was what impact does the form of abuse or aggression perpetrated against the healthcare provider have on providers reporting the incident? Findings suggest that there is indeed an impact of the form of abuse or aggression and the healthcare provider's reporting of the same. We are able to reject the null hypothesis that there is no association between form of the most recent encounter of patient perpetrated aggression and violence and the providers reporting in favor of the alternative hypothesis. More specifically, while it was initially hypothesized that providers are more likely to report more severe acts of violence to include physical aggression over verbal aggression (H_{1a}), findings suggest that this is not in fact the case. Thus we are unable to reject the null hypothesis of H_{1a} . However, we may accept the alternate hypothesis that providers are less likely to file a report regarding sexual aggression as compared to verbal aggression/violence (H_{1b}). Consequentially, findings of this research support

the assertion that the odds are individuals who experience verbal violence or aggression are four times more likely to report these incidents than individuals who experience sexual violence.

Regarding the second sub-question of this analysis, regarding the characteristics of the healthcare provider that impact whether the provider reports abuse or aggression, no statistically significant relationship was found regarding age or experience of the provider and the relationship to incident reporting. We must therefore accept the null hypotheses that provider characteristics of age and years of experience, as operationalized in this study, do not offer a statistically significant contribution to providers reporting of their most recent encounter of patient perpetrated aggression/violence. Consequentially, we must reject alternative hypotheses H_{2a} and H_{2b} . One provider characteristic, which was not included in the initial hypotheses of this study is that the provider's discipline does appear to have an impact on incident reporting. When examining the discipline of auxiliary services in comparison to nursing, findings suggest that auxiliary services are two-times more likely to report such incidents than nurses, however this finding warrants further research, as it was not found to sustain statistical significance when examined with the other provider characteristics in this study.

Finally, regarding characteristics of the patients perpetrating the assault, and the impact of such on the provider's reporting of the incident, we must reject the alternative hypothesis H_3 in this study, as there was no statistically significant relationship found between the patient's health or mental health diagnoses and the provider's reporting the incident. Essentially study findings were inconclusive regarding the third sub question of this study and associated

hypotheses. No statistically significant findings were found examining patient diagnosis and provider's reporting of patient perpetrated violence and aggression. We therefore accept the null hypotheses ($H_3:0$) patient diagnosis, as defined in this study, does not contribute to provider incident reporting.

Discussion of Theoretical Framework

This research postulated that stress theory would aid in explaining and predicting how a healthcare provider will react to a stressful event, such as when patient aggression or violence towards a provider is the stressor. Specifically, it was postulated that stress theory would aid in capturing and how characteristics of the provider contribute to incident reporting. While this theory does offer a falsifiable framework, the data collected does not offer a statistically significant contribution to this effect. However, as noted in the statistical analysis section above, there is a difference, albeit not significant at the $p < .05$ level, between the disciplines of nursing and auxiliary services in terms of incident reporting. Therefore, it remains possible that there is an inherent difference in the way each discipline was trained to cope with such incidents or varying adaptive stress responses of these varying disciplines and their ability to mediate the stress response. Further research on this topic is therefore warranted, examining what particular elements may mediate or moderate this difference and produce a statistically significant result. Stress theory was also postulated to offer a contribution to the impact of patient characteristics and the provider's reporting of patient perpetrated violence. Again in this case, the data does not offer a statistically significant contribution to this effect.

In this study, broken windows theory was postulated to explain and predict the relationship between the severity of the form of violence and the social norms regarding tolerating lesser forms of violence. While broken windows theory does indeed suggest that tolerance of minor offences (in this study verbal threats or attacks), is an indication to patient perpetrators of violence that more extreme consequences will be neither reported nor controlled. However, the data suggests otherwise in this case. The lesser form of violence, verbal violence, was reported four times more than the more severe form of sexual violence. This would suggest that the social norms currently permit the reporting of verbal violence more so than sexual violence. Despite the falsifiability of this theory, the present study did not include measurement of the social norms regarding incident reporting, and as such further research to this effect would be warranted to support this assertion.

Examining the contribution of the theory of reasoned action, it was postulated that for the non-institutional healthcare provider, the intent to report patient perpetrated violence would be impacted by the characteristics of the patient and the provider's attitude about both the behavior and the patient illness. The findings of this study are unable to contribute to this theoretical perspective, as it was not found that patients who are deemed vulnerable were reported either more or less than those who were not. While the theory supported the hypothesis that healthcare providers in non-institutional healthcare settings are less likely to file a report due to moderating characteristics of the patient, findings of this study were inconclusive to this effect. As the findings of this study were inconclusive in the support of these theoretical frameworks,

discussion of the limitations of this study and the possible implications of each limitation is thereby warranted.

Limitations

As the results of this study were inconclusive regarding providing clear statistical significance for the majority of included variables and their contribution to predicting incident reporting, it becomes necessary to examine each of the potential limitations to this research.

Limitations with Instrumentation

One such limitation is the researcher developed survey instrument. While, as aforementioned, the majority of instruments used to examine incident reporting are researcher-developed (Campbell et al, 2015) it is possible that there were inherent failures of this measurement to capture the variables being investigated. The instrument utilized to capture the constructs under investigation, while developed through the use of a focus group, failed to be tested for all forms of reliability with a pilot survey. To this effect, it has been found that the more complex a concept, such as the form of violence being experienced, often times it is the instrument that defines the concept (Hawkes & Marsh, 2005). In this case, therefore, it is possible that the instrument developed did not adequately capture the construct being examined.

Another issue with this measurement tool is that, while a focus group was utilized in development of this measure, consistent with the development of other researcher designed surveys (Campbell et al, 2015), internal reliability and consistency of the measurement items was

not determined. As such, it becomes possible that the survey questions did not accurately measure the concepts they were designed to evaluate or questions were poorly worded, thereby threatening the reliability of the measure (Trochim & Donnelly, 2008). It is clear that future research is warranted on this survey instrument, to determine if the inconclusive findings of this study are in part attributable to failures of the instrument, rather than the model itself.

To this point, it is also possible that there was a failure to clearly operationalize the three forms of violence being examined for survey respondents. For example, it is possible that the delineation of types of abuse were subject to different interpretations by different respondents. While three questions were utilized in efforts to define both verbal and physical aggression prior to the inquiry regarding most recent form of violence, it is plausible that this added confusion, rather than clarification, for survey respondents. A final limitation which exists with the instrument is that the data collected for provider demographics, as a requirement of UFL IRB-01, was captured categorically, rather than as interval level variables. This limitation resulted in less variance and may have contributed to the lack of statistically significant findings when examining this domain.

Limitations with Sample

As aforementioned, to ensure an adequate sample size for the statistical analysis to have sufficient power and to maximize the generalizability of the results of the research, six distinct sample sites were chosen. Consequently, there was great variance among survey respondents in terms of their primary form of home healthcare to include providers working in primary care,

skilled home health care, hospice, and homeless healthcare services. It is possible that this variance in healthcare fields is may have skewed survey results to lead to inconclusive results. When examining each of the six sites individually, there was a vast difference found in incident reporting, such as the prevalence of reporting among ANC providers versus HUD/VASH providers; among ANC, 69.2% of respondents did report their most recent form of patient perpetrated violence, whereas among the HUD/VASH providers only 34.3% reported this occurrence. As such, there may elements which are unique to each of these subsamples which were not adequately captured or controlled within this investigation (Trochim & Donnelly, 2008). Additionally, these findings suggest another area for future research, to examine the inherent differences in each of the service settings and sites included within this study.

Another potential limitation of this study is that there was an inherent variance among respondents based upon their service setting which was not adequately addressed. For instance, the ANC sample served the rural area of Tavares, FL, whereas the HBPC sample included both urban areas such as Jacksonville FL and very rural areas such as the Ocala National Forest. Again, it is unknown if urban/rural variation in service areas contributed to the variance in responses and whether any of these elements may have had unknown moderating or mediating effects on provider incident reporting.

Finally, the sample as a whole was not a representative sample, but was obtained through use of convenience sampling. It is therefore a further limitation of this study that the sampling methodology employed attributed for the lack of statistically significant results, rather than the

variables themselves not being significant. As with any research surveying human subjects, it is not possible from this sole study to conclude that the variables themselves failed to contribute to provider incident reporting, but that the results of this study warrant further research on the topic to control for all of the aforementioned limitations of the present study.

Limitations with Analysis

One potential weakness in this study, which is inherent in the use of nonparametric statistical analysis, is that there is a great deal of estimating of parameters from the raw data (Tate, 1998). Essentially, as the data was collected as nominal and ordinal level data, to ensure for confidentiality of survey respondents, the independent variables were categorical rather than continuous, or interval level data. Additionally, there is the potential that conclusion validity of this study is impacted by the missing data (Trochim & Donnelly, 2008). While only three surveys were excluded for lack of completeness, a great majority of survey responses (85, 50.3%) were coded as 50-99% complete, and it is a possibility that respondents did not complete items due to the questions being sensitive to the point respondents did not choose to answer, or the questions were not worded in the way that would allow ease of completion. Unfortunately, while this does potentially threaten conclusion validity, beyond examining abnormalities in the distribution of survey responses, this is unable to be mediated further by statistical analyses.

ETHICS

No conflicts of interest arose in this research. To ensure confidentiality and anonymity of respondents, at each site, surveys were placed on a table in room during all meetings, where staff could pick up and complete and drop in box in the back of the room, allowing for data to be collected through survey in a manner that human subjects cannot be identified. Additionally, the surveys included no information which allows for identifiers linked to the subjects.

This research required approval of institutional review boards as well as approval from all organizations involved in the study. For the VHA samples, written permission was obtained by the NFL/SG VHA HUD/VASH and HBPC service chiefs and program managers to attend one all-staff meeting of non-institutional healthcare providers for each service. The NFL/VHA utilizes the University of Florida IRB-01, which approved this research as an exempt study. Permission was also obtained from the three bargaining units within the VHA prior to dissemination of staff surveys within the VHA.

For the non-VHA sites, approval was received first in writing from each of the organizations. The director of human resources and the nursing manager of ANC provided written consent to disseminate survey to staff. The director of nursing at Kindred Home Care provided written permission to conduct the survey at their Ocala FL office. At Cornerstone Hospice the Chief Operating Officer and Director of Social Services both signed off on the survey and provided written documentation consenting to dissemination of the survey to staff. At MCNA, the president of the Association similarly provided written permission to disseminate

survey. Upon receipt of all of these letters, the Institutional Review board of the University of Central Florida also approved this research as an exempt study.

CONCLUSION

Prior studies have identified a gap in the literature regarding prevalence of patient perpetrated violence in non-institutional healthcare settings and on factors contributing to providers' reporting patient violence and aggression. This study lessens the gap through examining characteristics of the healthcare provider, characteristics of the patient perpetrator and the form of violence or aggression and the contribution of each to the healthcare provider's reporting of incidents of violence and aggression. With a solid theoretical framework and clearly articulated research questions, this research examined 169 survey responses with findings that greater than 79% of healthcare providers in non-institutional health care settings have experienced at least one form of patient violence or aggression in the past twelve months. Furthermore, 52% of these incidents remain unreported. Bivariate logistic regression analysis conducted with the data collected suggests that the odds of reporting verbal abuse is four times more likely to be reported than the occurrence of sexual aggression. The contribution of characteristics of the provider and characteristics of the patient on provider incident reporting, however, were inconclusive based upon the collected data.

Implications

The results of this study support findings of existing literature that patient perpetrated violence remains largely unreported in the healthcare field. Filling the existing gap in the literature, this study supports the assertion that this phenomenon extends into non-institutional

healthcare settings, offering clear information on the prevalence of this issue. Among the sample included in this study, 52% of healthcare providers in non-institutional care settings did not report the most recent episode of patient perpetrated violence. As incident reporting has been found to be a critical component of prevention of patient perpetrated violence, this study highlights the need for further interventions which may increase incident reporting. One of the aims of this study, to enhance healthcare organizations' understanding of areas for intervention to enhance incident reporting and combat the phenomenon of staff member under reporting of incidents, was partially met by this study.

While characteristics of the patient and the provider did not offer a statistically significant contribution to the model, statistical findings support the assertion that the form of violence perpetrated does help explain and predict the variance among provider reporting. As the odds of provider's reporting sexual abuse are four times less likely than reporting verbal abuse, this knowledge has the potential to enhance both healthcare organizations, providers and the ability of the industry at large to build effective violence prevention protocols and policies specific to the form of violence perpetrated and the providers' management of such. However, it is clear that further research is required to develop targeted interventions to increase provider incident reporting, therefore allowing for a better understanding of this phenomena and the consequential development of programs and policies to decrease the occurrence of patient perpetrated violence and aggressions towards healthcare providers.

Areas of Future Research

In summary, this current study provides an exploratory examination of incident reporting of patient perpetrated violence and aggression in non-institutional healthcare settings. Intriguing results suggest that additional targeted rigorous research is required with larger samples. Specific areas for future research are suggested as follows.

Contrary to hypothesized expectations, verbal abuse is more often reported than more severe forms of abuse, such as sexual violence and aggression. Consequentially, further research is required in the public affairs arena exploring this phenomenon. For instance, future research which differentiates between verbal sexual violence and physical sexual violence may offer an explanation for this phenomenon, answering the relevant question of why this is the case, may then inform policies to prevent such an occurrence and increase the reporting of sexual abuse and violence among non-institutional healthcare providers.

While not a component of this research questions of this study, the survey utilized did collect additional data. Specifically, respondents were provided an opportunity to indicate that their non-reporting of incidents was due to a lack of reporting mechanism in place, versus having a mechanism in place yet choosing not to report the patient perpetrated violence. Cursory analysis indicates that of the 88 providers who did not report the patient perpetrated abuse, 22.5% (N=38) had no reporting mechanism in place to do so. Consequently, additional analysis of the data from this survey, examining subcategories for those who did not report due to no mechanism is warranted. Qualitative data was also collected as part of this survey, allowing for

respondents to provide additional information or comments on this topic. Exploration of this data utilizing qualitative methods also has the potential for producing additional information and furthering the research on this topic.

Using the existing data collected for this study, future analysis is also warranted to examine the contribution of gender to incident reporting. While this was not done in present study, as aforementioned UFL IRB-01 would not permit inquiry of gender among VHA respondents, this is a category for which there is data for a significant number of respondents. Consequentially, evaluation of this provider characteristics as a potential predictor of reporting patient perpetrated violence is possible as another area of further exploration with the existing data from this study. Another provider characteristic which this study indicates requires further exploration is provider discipline. As discussed previously, there does appear to be a contribution to the overall model of reporting among auxiliary services in contrast to nursing services, with auxiliary service providers being two times more likely to report patient perpetrated violence and aggression. Conducting a sub analysis and examining the variance among each of the disciplines included in the nursing variable and auxiliary services variable would be of benefit to determine the relative contribution of each specific discipline to incident reporting.

Going beyond the existing data collected, another area for future research should include further testing of psychometrics of the measure used in this study to capture incident reporting, using this study as a pilot to further develop and streamline the survey measure. As discussed in

the limitations section of this study, the lack of a robust survey with parametric testing may have contributed to the inconclusive results regarding provider and patient characteristics.

Consequently, future research on this element is also warranted.

Additional steps to extend this research would be to examine the variance in reporting among the service setting and agency. Specifically, another finding of this study, which was not anticipated yet indicative of the need for additional exploration, was that there was great variance in reporting among the agencies. When examining the variable of data collection site, a cursory analysis suggests that there was a statistically significant difference in incident reporting among the federal healthcare providers within the VHA (HUD/VASH and HBPC) where incident reporting was overwhelmingly much lower. These two sites were significantly difference at the α levels of .029 and .011, respectively; thus suggesting that there is further exploration needed to examine why providers at the VHA sites had a statistically significant variance in incident reporting in contrast to those home health agencies.

APPENDIX A: SURVEY

Thank you for taking the time to complete the following survey, which consists of four sections and a total of 38 questions. The estimated time burden for this survey is approximately 3-7 minutes.

Section I: Provider Demographics (5 questions) To ensure this survey remains completely anonymous, you are free to skip any of the following questions in this section which you feel may potentially identify you.

1. Which of the following most closely matches your job title or discipline under which you are employed?

- | | | |
|--------------------------------|--|--|
| <input type="radio"/> ARNP | <input type="radio"/> Occupational Therapist | <input type="radio"/> Psychiatrist |
| <input type="radio"/> RN | <input type="radio"/> Dietician | <input type="radio"/> MD (other) |
| <input type="radio"/> LPN | <input type="radio"/> Pharmacist | <input type="radio"/> Other: (specify) _____ |
| <input type="radio"/> MSW/LCSW | <input type="radio"/> Psychologist | |

2. Please identify your age range below.

- | | | |
|-----------------------------|-----------------------------|-----------------------------|
| <input type="radio"/> 20-29 | <input type="radio"/> 40-49 | <input type="radio"/> 60-69 |
| <input type="radio"/> 30-39 | <input type="radio"/> 50-59 | <input type="radio"/> 69+ |

3. What is your gender?

- | | |
|----------------------------|------------------------------|
| <input type="radio"/> Male | <input type="radio"/> Female |
|----------------------------|------------------------------|

4. Please choose the option which best describes your highest level of education.

- | | |
|---|--|
| <input type="radio"/> High School Diploma/
GED or equivalent | <input type="radio"/> Bachelors Degree |
| <input type="radio"/> Associates Degree | <input type="radio"/> Masters Degree |
| | <input type="radio"/> Doctoral Degree |

5. Please choose the option which best describes your years of experience working in the healthcare field:

- | | | |
|--|-----------------------------------|-----------------------------------|
| <input type="radio"/> Less than one year | <input type="radio"/> 6-10 years | <input type="radio"/> 16-20 years |
| <input type="radio"/> 1-5 years | <input type="radio"/> 11-15 years | <input type="radio"/> 21+ years |

Section II. Encounters (30 questions)

In the past 12 months, have you experienced any of the following in a non-institutional/homecare setting from a patient whom you were providing care? Please check the appropriate responses to each item below.

1. Had a patient yell, scream or curse at you?

- ☐ No (please continue to question 2) ☐ Yes (please complete questions below)

1.1. If Yes: How many times has this happened to you over the past year:

- ☐ 1-3 ☐ 4-6 ☐ 7-10 ☐ More than 10

1.2. Did you report this any of these experiences (to supervisor, incident report, etc?)

- ☐ No (reporting system/
procedure does not exist) ☐ No (reporting system/
procedure does exist) ☐ Yes

1.3. Regarding the patient involved in this incident(s), to the best of your knowledge and recollection, did that patient have any of the following active problems/diagnoses? (Check all that are applicable.)

- ☐ Dementia / cognitive impairment ☐ Acute Medical Issue/ Illness
☐ Mental Illness ☐ None of these diagnoses
☐ Substance use / substance abuse

2. Been verbally threatened with physical harm, without a weapon or object present?

- ☐ No (please continue to question 3) ☐ Yes (please complete questions below)

2.1. If Yes: How many times has this happened to you over the past year:

- ☐ 1-3 ☐ 4-6 ☐ 7-10 ☐ More than 10

2.2. Did you report this any of these experiences (to supervisor, incident report, etc?)

- ☐ No (reporting system/
procedure does not exist)
 ☐ No (reporting system/
procedure does exist)
 ☐ Yes

2.3. Regarding the patient involved in this incident(s), to the best of your knowledge and recollection, did that patient have any of the following active problems/diagnoses? (Check all that are applicable.)

- ☐ Dementia / cognitive impairment
 ☐ Acute Medical Issue/ Illness
☐ Mental Illness
 ☐ None of these diagnoses
☐ Substance use / substance abuse

3. Been physically harmed by a patient, with or without a weapon or object present?

- ☐ No (please continue to question 4)
 ☐ Yes (please complete questions below)

3.1. If Yes: How many times has this happened to you over the past year:

- ☐ 1-3
 ☐ 4-6
 ☐ 7-10
 ☐ More than 10

3.2. Did you report this any of these experiences (to supervisor, incident report, etc?)

- ☐ No (reporting system/
procedure does not exist)
 ☐ No (reporting system/
procedure does exist)
 ☐ Yes

3.3. Regarding the patient involved in this incident(s), to the best of your knowledge and recollection, did that patient have any of the following active problems/diagnoses? (Check all that are applicable.)

- ☐ Dementia / cognitive impairment
 ☐ Acute Medical Issue/ Illness
☐ Mental Illness
 ☐ None of these diagnoses
☐ Substance use / substance abuse

4. Had a patient say something to you which made you feel threatened or unsafe?

☐ No (please continue to question 5) ☐ Yes (please complete questions below)

4.1. If Yes: How many times has this happened to you over the past year:

☐ 1-3 ☐ 4-6 ☐ 7-10 ☐ More than 10

4.2. Did you report this any of these experiences (to supervisor, incident report, etc?)

☐ No (reporting system/
procedure does not exist) ☐ No (reporting system/
procedure does exist) ☐ Yes

4.3. Regarding the patient involved in this incident(s), to the best of your knowledge and recollection, did that patient have any of the following active problems/diagnoses? (Check all that are applicable.)

☐ Dementia / cognitive impairment ☐ Acute Medical Issue/ Illness

☐ Mental Illness ☐ None of these diagnoses

☐ Substance use / substance abuse

5. Had a patient touch you in any way which made you feel physically unsafe?

☐ No: (please continue to question 6.) ☐ Yes: (please complete questions below)

5.1. If Yes: How many times has this happened to you over the past year:

☐ 1-3 ☐ 4-6 ☐ 7-10 ☐ More than 10

5.2. Did you report this any of these experiences (to supervisor, incident report, etc?)

☐ No (reporting system/
procedure does not exist) ☐ No (reporting system/
procedure does exist) ☐ Yes

5.3. Regarding the patient involved in this incident(s), to the best of your knowledge and recollection, did that patient have any of the following active problems/diagnoses? (Check all that are applicable.)

- ☐ Dementia / cognitive impairment ☐ Acute Medical Issue/ Illness
- ☐ Mental Illness ☐ None of these diagnoses
- ☐ Substance use / substance abuse

6. Had a patient touch you or say something to you which you felt was sexually inappropriate?

- ☐ No: (please continue to question 7.) ☐ Yes: (please complete questions below)

6.1. If Yes: How many times has this happened to you over the past year:

- ☐ 1-3 ☐ 4-6 ☐ 7-10 ☐ More than 10

6.2. Did you report this any of these experiences (to supervisor, incident report, etc?)

- ☐ No (reporting system/
procedure does not exist) ☐ No (reporting system/
procedure does exist) ☐ Yes

6.3. Regarding the patient involved in this incident(s), to the best of your knowledge and recollection, did that patient have any of the following active problems/diagnoses? (Check all that are applicable.)

- ☐ Dementia / cognitive impairment ☐ Acute Medical Issue/ Illness
- ☐ Mental Illness ☐ None of these diagnoses
- ☐ Substance use / substance abuse

7. Been hit, kicked, grabbed, punched or spat at?

- ☐ No: (Thank you for taking survey, questions are now complete) ☐ Yes: (please complete questions below)

7.1. If Yes: How many times has this happened to you over the past year:

- ☐ 1-3 ☐ 4-6 ☐ 7-10 ☐ More than 10

7.2. Did you report this any of these experiences (to supervisor, incident report, etc?)

- ☐ No (reporting system/
procedure does not exist) ☐ No (reporting system/
procedure does exist) ☐ Yes

7.3. Regarding the patient involved in this incident(s), to the best of your knowledge and recollection, did that patient have any of the following active problems/diagnoses? (Check all that are applicable.)

- ☐ Dementia / cognitive impairment ☐ Acute Medical Issue/ Illness
☐ Mental Illness ☐ None of these diagnoses
☐ Substance use / substance abuse

8. Regarding the last incident of patient perpetrated violence or aggression you experienced, which most closely describes the form of violence or aggression you experienced?

- ☐ Verbal ☐ Physical ☐ Sexual

8.1 Did you report this experience (to supervisor, incident report, etc?)

- ☐ No (reporting system/
procedure does not exist) ☐ No (reporting system/
procedure does exist) ☐ Yes

8.2 Regarding the patient involved in this incident, to the best of your knowledge and recollection, did that patient have any of the following active problems/diagnoses? (Check all that are applicable.)

- ☐ Dementia / cognitive impairment ☐ Mental Illness

☐ Substance use / substance abuse

☐ None of these diagnoses

☐ Acute Medical Issue/ Illness

Section III. Agency Procedures (2 questions)

Please complete the following two questions regarding the agency where you are currently employed providing healthcare services for patients.

1. To your knowledge, is there any formal procedure within your agency for reporting incidents of patient violence or aggression?

☐ Yes

☐ No

☐ I Don't Know

2. If you answered yes above, please describe your agency procedure:

Section IV. Comments (1 question)

1. Is there any other information you would like to tell us about this issue? _____

Thank you for your time and completion of this survey. Please drop the survey in the box located at the back of the room.

APPENDIX B: WAIVER & CONSENT

Title of Project: Healthcare providers decisions' to report incidences of patient violence and aggression in non-institutional health care settings: examining contributory factors of provider characteristics, patient characteristics and form of abuse. IRB#00001138

Principal Investigator: Colleen L. Campbell, LCSW

1. **Purpose of the Study:** The purpose of this research study is to examine those factors which contribute to a healthcare provider reporting or not reporting incidents of patient violence or aggression in a non-institutional healthcare setting.
2. **Procedures to be followed:** You will be asked to answer 35 questions on a survey.
3. **Duration:** It will take about 5 minutes to complete the survey.
4. **Research Benefits:** There is no direct benefit to you for being in this study. There may be a benefit to others depending on the results of this study.
5. **Research Risks:** There is a risk that information received by these authorized persons or agencies could then be passed on to others beyond your authorization and not covered by HIPAA.
6. **Statement of Confidentiality:** Your participation in this research is confidential. The survey does not ask for any information that would identify who the responses belong to. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared because your name is in no way linked to your responses.
7. **Right to Ask Questions:** Please contact Colleen L. Campbell, LCSW at 352-318-1303 with questions or concerns about this study.
8. **Privacy Authorization:** No raw data collected will be disseminated. Anonymous survey responses once analyzed will be utilized for completion of doctoral research by PI with faculty of UCF.
9. **Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. If you choose not to take part, this will have no effect. If you have any questions about your rights as a research subject, you can phone the UF Institutional Review Board (IRB-01) at 352-273-9600 or the UCF IRB at 407-823-3778.

Completion and return of the survey implies that you have read the information in this form and consent to take part in the research. Please keep this form for your records or future reference.

APPENDIX C: UCF IRB APPROVAL LETTER



University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: UCF Institutional Review Board #1
FWA00000351, IRB00001138

To: Colleen Campbell

Date: August 25, 2015

Dear Researcher:

On 08/25/2015, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review: Exempt Determination
Project Title: Patient Violence and Aggression in Non-Institutional Health Care
Settings: Predictors of Reporting by Healthcare Providers
Investigator: Colleen Campbell
IRB Number: SBE-15-11489
Funding Agency:
Grant Title:
Research ID: N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the [Investigator Manual](#).

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

A handwritten signature in black ink that reads "Kanille Chay" followed by a horizontal line.

IRB Coordinator

APPENDIX D: UFL IRB APPROVAL LETTER

DATE: 7/21/2015

TO: Colleen Campbell
8900 SE 16th Mulberry Lane
The Villages, Florida 32162

FROM: Peter Iafrate, Pharm.D
Chair IRB-01

IRB#: **IRB201500364**

TITLE: Healthcare providers reporting incidences of patient violence and aggression in non-Institutional health care settings: examining contributory factors of provider characteristics, patient characteristics and form of abuse.

Approved as Exempt

You have received IRB approval to conduct the above-listed research project. Approval of this project was granted on 7/21/2015 by IRB-01. This study is approved as exempt because it poses minimal risk and is approved under the following exempt category/categories:

2. This research involves the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior. Information obtained is recorded in such a manner that human subjects cannot be identified, directly or through identifiers linked to the subjects. Disclosure of the human subjects responses outside the research does not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects financial standing, employability, or reputation.

Approval Includes, but is not limited to:

Anonymous survey to be analyzed

Special notes to Investigator (if applicable):

Reviewer Notes: 0 Reviewer Notes

Principal Investigator Responsibilities:

The PI is responsible for the conduct of the study. Please review these responsibilities described at: <http://irb.ufl.edu/irb01/researcher-information/researcherresponsibilities.html>

Important responsibilities described at the above link include:

- Using currently approved consent form to enroll subjects (if applicable)
- Renewing your study before expiration
- Obtaining approval for revisions before implementation
- Reporting Adverse Events
- Retention of Research Records
- Obtaining approval to conduct research at the VA
- Notifying other parties about this project's approval status

cc:

The Foundation for The Gator Nation
An Equal Opportunity Institution

Confidentiality Notice: This e-mail message, including any attachments, is for the sole use of the intended recipients(s), and may contain legally privileged or confidential information. Any other distribution, copying, or disclosure is strictly prohibited. If you are not the intended recipient, please notify the sender and destroy this message immediately. Unauthorized access to confidential information is subject to federal and state laws and could result in personal liability, fines, and imprisonment. Thank you.

APPENDIX E: TABLES

Table 1. Codebook

Table 1. Codebook		
Variable	SPSS Variable Name	Coding Instructions
Data Collection Site	Site	1=VHA HUD/VASH 2= ANC 3=Cornerstone Hospice 4=MCNA 5=VA HBPC 6= Kindred
Provider Discipline	Disc_1	1= Nursing (LPN, RN, ARNP) 2=Auxiliary Services (SW, OT, Diet, Pharm, Psychology) 3= Doctors (MD, including psychiatry) 4= Other
Age Range	AgeRng	1= 20-29 2=30-39 3=40-49 4=50-59 5=60-69 6=70+
Education Level	EducLvl	1=HS/GED 2=Associates Degree 3=Bachelors Degree 4=Masters Degree 5=Doctoral Degree
Years of Experience	YrsExp	1=<1year 2=1-5 years 3=6-10 years 4=11-15 years 5=16-20 years 6=21+ years

Patient Diagnosis	Ptdx	1=No Diagnosis
		2=Dementia/Cognitive Impairment
		3=Mental Illness
		4=Substance Abuse
		5=Acute Medical Illness
Most Recent for of Abuse	Abuse	1=Verbal
		2=Physical
		3=Sexual

Table 2 Descriptive Statistics

Table 2. Descriptive Statistics of Full Sample

		Frequency	Percent
Valid Site	VHA HUD/VASH	31	18.3
	VA HBPC	31	18.3
	ANC	10	5.9
	Kindred at Home	13	7.7
	MCNA	12	7.1
	Cornerstone Hospice	72	42.6
	Total N	169	100
Valid Discipline	Nursing (LPN,RN,ARNP)	81	48.5
	Auxiliary (SW,OT,Diet,Pharm,Psych)	60	35.9
	Doctors (Psychiatry/MD)	4	2.4
	Other	22	13.2
	Total N	167	98.8
	Missing	2	1.2
Valid Age Range	20-29	10	6.0
	30-39	35	20.8
	40-49	47	28.0
	50-59	52	31.0
	60-69	23	13.7
	70+	1	0.6
	Total N	168	99.4
	Missing	1	0.6
Valid Education Level	HS/GED	16	9.5
	Associates Degree	44	26.0
	Bachelor's Degree	20	11.8

	Master's Degree	81	47.9
	Doctoral Degree	8	4.7
	Total	169	100
Valid Years of Experience	<1 year	2	1.2
	1-5 years	23	13.6
	6-10 years	30	17.8
	11-15 years	27	16.0
	16-20 years	28	16.6
	21+ years	59	34.9
	Total	169	100
Most Recent Form of Abuse	Verbal	133	62.4
	Physical	18	8.5
	Sexual	18	8.5
Report Made	No	88	41.3
	Yes	81	38

Table 3 Normality Testing of Report Made and Provider Age

Table 3. Normality Testing of Report Made and Provider Age				
	Age Range		Statistic	Std. Error
Report Made	20-29	Variance	.278	
		Std. Deviation	.527	
		Skewness	.000	.687
		Kurtosis	-2.571	1.334
	30-39	Variance	.247	
		Std. Deviation	.497	
		Skewness	.427	.398
		Kurtosis	-1.932	.778
	40-49	Variance	.250	
		Std. Deviation	.500	
		Skewness	-.311	.347
		Kurtosis	-1.990	.681
	50-59	Variance	.249	
		Std. Deviation	.499	
		Skewness	.321	.330
		Kurtosis	-1.975	.650
	60-69	Variance	.261	
		Std. Deviation	.511	
		Skewness	-.093	.481
		Kurtosis	-2.190	.935

a. Report Made is constant when Age Range = 70+. It has been omitted.

Table 4 Tests of Normality Report Made and Provider Age

Table 4. Tests of Normality Report Made and Provider Age^b

		Shapiro-Wilk		
Age Range				
Report Made	20-29	.655	10	.000
	30-39	.623	35	.000
	40-49	.629	47	.000
	50-59	.628	52	.000
	60-69	.639	23	.000

b. Report Made is constant when Age Range = 70+. It has been omitted.

Table 5 Normality Testing of Report Made and Provider Education Level

Table 5. Normality Testing of Report Made and Provider Education Level			
	Education Level	Statistic	Std. Error
Report Made	HS/GED	Variance	.267
		Std. Deviation	.516
		Skewness	.000 .564
		Kurtosis	-2.308 1.091
	Associates Degree	Variance	.251
		Std. Deviation	.501
		Skewness	-.285 .357
		Kurtosis	-2.012 .702
	Bachelors Degree	Variance	.253
		Std. Deviation	.503
		Skewness	.442 .512
		Kurtosis	-2.018 .992
	Masters Degree	Variance	.252
		Std. Deviation	.502
		Skewness	.126 .267
		Kurtosis	-2.035 .529
	Doctoral Degree	Variance	.214
		Std. Deviation	.463
		Skewness	1.440 .752
		Kurtosis	.000 1.481

Table 6. Tests of Normality Report Made and Provider Education Level

Table 6. Tests of Normality Report Made and Provider Education Level				
		Shapiro-Wilk		
Education Level				
Report Made	HS/GED	.644	16	.000
	Associates Degree	.630	44	.000
	Bachelors Degree	.626	20	.000
	Masters Degree	.635	81	.000
	Doctoral Degree	.566	8	.000

Table 7. Normality Testing of Report Made and Provider Years of Experience

Table 7. Normality Testing of Report Made and Provider Years of Experience^a

	Years of Experience		Statistic	Std. Error
Report Made	1-5 yrs	Variance	.257	
		Std. Deviation	.507	
		Skewness	.282	.481
		Kurtosis	-2.113	.935
	6-10 yrs	Variance	.257	
		Std. Deviation	.507	
		Skewness	.141	.427
		Kurtosis	-2.127	.833
	11-15 yrs	Variance	.259	
		Std. Deviation	.509	
		Skewness	-.079	.448
		Kurtosis	-2.160	.872
	16-20 yrs	Variance	.254	
		Std. Deviation	.504	
		Skewness	.305	.441
		Kurtosis	-2.060	.858
	21+ yrs	Variance	.254	
		Std. Deviation	.504	
		Skewness	-.105	.311
		Kurtosis	-2.060	.613

a. Report Made is constant when Years of Experience = <1year. It has been omitted.

Table 8. Tests of Normality Report Made and Provider Years of Experience

Table 8. Tests of Normality Report Made and Provider Years of Experience^a

	Years of Experience	Shapiro-Wilk		
Report Made	1-5 yrs	.634	23	.000
	6-10 yrs	.637	30	.000
	11-15 yrs	.638	27	.000
	16-20 yrs	.631	28	.000
	21+ yrs	.636	59	.000

a. Report Made is constant when Years of Experience = <1year. It has been omitted.

Table 9 Crosstabulation of Form of Abuse and Report Made

Table 9. Crosstabulation of Form of Abuse and Report Made

Count					Spearman	Approx. Sig.
		Report Made			Correlation	
		No	Yes	Total		
Most Recent Form of Abuse	Verbal	62	71	133	.222	.004
	Physical	12	6	18	-.101	.192
	Sexual	14	4	18	.068	.021
Total		88	81	169		

Table 10 Collinearity Statistics

Table 10. Collinearity Statistics ^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	Age Range	.513	1.950
	Education Level	.424	2.361
	Years of Experience	.503	1.988
	Disc:Nursing	.341	2.929
	Disc:Auxilliary)	.226	4.430
	Disc:Doctors	.585	1.711
	Verbal Abuse	.157	6.372
	Physical Abuse	.257	3.892
	Sexual Abuse	.260	3.839
	Ptdx=No diagnosis	.054	18.691
	Ptdx=Dementia/Cog Impairment	.025	39.514
	Ptdx=Mental Illness	.039	25.452
	Ptdx=Substance Use/Abuse	.053	18.793
	Ptdx=Acute Illness/Issue	.081	12.370

a. Dependent Variable: Report Made

Table 11 Logistic Regression Reporting & Form of Abuse

Table 11. Logistic Regression Reporting & Form of Abuse							
		B	S.E.	Wald	df	Sig.	Exp(B)
Form of Abuse ^a	Physical Abuse	-.813	.529	2.351	1	.125	.444
	Sexual Abuse	-1.372	.593	5.359	1	.021	.254
	Constant	.120	.173	.477	1	.490	1.127

a. Variable(s) entered on step 1: PhysicalAbuse, SexualAbuse.

Table 12 Hosmer & Lemeshow Test

Table 12. Hosmer and Lemeshow Test			
Step	Chi-square	df	Sig.
1	.000	1	1.000

Table 13 Omnibus Tests of Model Coefficients

Table 13. Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	8.024	2	.018
	Block	8.024	2	.018
	Model	8.024	2	.018

Table 14. Model Summary

Table 14. Model Summary			
		Cox & Snell R Square	Nagelkerke R Square
Step	-2 Log likelihood		
1	225.269 ^a	.046	.062

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Table 15. Classification Table

Table 15. Classification Table^a

			Predicted		
			Report Made		Percentage
Observed			No	Yes	Correct
Step 1	Report Made	No	26	63	29.2
		Yes	10	71	87.7
Overall Percentage					57.1

a. The cut value is .500

Table 16 Logistic Regression Reporting & Form of Abuse Pairwise Comparison

Table 16 Logistic Regression Reporting & Form of Abuse Pairwise Comparison							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	PhysicalAbuse	.560	.756	.548	1	.459	1.750
	VerbalAbuse	1.372	.593	5.481	1	.021	3.944
	Constant	-1.253	.567	4.883	1	.027	.286

a. Variable(s) entered on step 1: PhysicalAbuse, VerbalAbuse.

Table 17. Hosmer & Lemeshow Test Pairwise Comparison

Table 17. Hosmer and Lemeshow Test Pairwise Comparison			
Step	Chi-square	df	Sig.
1	.000	1	1.000

Table 18. Pairwise Comparison Omnibus Tests

Table 18. Pairwise Comparison Omnibus Tests of Model Coefficients				
		Chi-square	df	Sig.
Step 1	Step	8.024	2	.018
	Block	8.024	2	.018
	Model	8.024	2	.018

Table 19 Logistic Regression Reporting & Ordinal Level Variables of Provider Characteristics

Table 19. Logistic Regression Reporting & Ordinal Level Variables of Provider Characteristics

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	YrsExp	.141	.131	1.151	1	.283	1.151
	EducLvl	-.202	.140	2.077	1	.150	.817
	AgeRng	-.021	.174	.014	1	.905	.979
	Constant	.015	.628	.001	1	.981	1.015

a. Variable(s) entered on step 1: YrsExp, EducLvl, AgeRng.

Table 20 Logistic Regression & Provider Discipline

Table 20. Logistic Regression and Provider Discipline

		B	S.E.	Wald	Sig.	Exp(B)
Step 1 ^a	Auxiliary Services	.699	.347	4.050	.044	2.011
	Doctors	1.322	1.176	1.263	.261	3.750
	Other Disciplines	.223	.481	.215	.643	1.250
	Constant	-2.020	1.336	2.286	.131	.133

a. Variable(s) entered on step 1: DiscRec_2, DiscRec_3, DiscRec_4.

Table 21 Omnibus Tests of Model Coefficients

Table 21. Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	5.052	3	.168
	Block	5.052	3	.168
	Model	5.052	3	.168

Table 22 Logistic Regression Reporting & All Provider Characteristics

Table 22. Logistic Regression Reporting & All Provider Characteristics

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	YrsExp	.103	.142	.526	1	.468	1.109
	EducLvl	-.081	.198	.167	1	.683	.922
	AgeRng	-.011	.190	.004	1	.952	.989
	Discipline Nursing			2.174	3	.537	
	Auxiliary Services	.182	.538	.114	1	.735	1.200
	Doctors	-.383	.654	.343	1	.558	.682
	Other Disciplines	-1.060	1.392	.580	1	.446	.346
	Constant	-.161	.690	.055	1	.815	.851

a. Variable(s) entered on step 1: YrsExp, EducLvl, AgeRng, Disc_1.

Table 23 Logistic Regression Reporting & Patient Diagnosis (Dementia as Reference)

Table 23. Logistic Regression Reporting and Patient Diagnosis (Dementia as Reference)

		B	S.E.	Wald	Sig.	Exp(B)
Step 1 ^a	No Diagnosis	.820	.541	2.295	.130	2.270
	Mental Illness	.042	.439	.009	.925	1.042
	Sub. Abuse	-.315	.499	.398	.528	.730
	Acute Illness	.666	.656	1.031	.310	1.946
	Constant	-1.240	1.200	1.068	.301	.290

a. Variable(s) entered on step 1: ptdxRec_1, ptdxRec_3, ptdxRec_4, ptdxRec_5.

Table 24. Logistic Regression Reporting and Patient Diagnosis (No Diagnosis as Reference)

Table 24. Logistic Regression Reporting and Patient Diagnoses (No Diagnosis as Reference)

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	No Diagnosis			4.524	5	.477	
	Cognitive Impairment	.838	.510	2.699	1	.100	2.312
	Mental Illness	.823	.575	2.046	1	.153	2.277
	Substance Abuse	1.050	.636	2.728	1	.099	2.857
	Acute Illness	.069	.765	.008	1	.928	1.071
	Constant	-.762	.458	2.772	1	.096	.467

a. Variable(s) entered on step 1: Ptdx.

Table 25 Overall Model

Table 25. Overall Model Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Physical Abuse	1.120	.633	3.131	1	.077	3.065
	Sexual Abuse	1.425	.703	4.111	1	.043	4.157
	Years of Experience	.108	.157	.475	1	.491	1.115
	Education Level	-.075	.230	.107	1	.743	.927
	Age Range	-.027	.208	.017	1	.896	.973
	Auxiliary Services	.768	.551	1.939	1	.164	2.155
	Doctors	.762	1.353	.317	1	.573	2.143
	Other Disciplines)	-.144	.593	.059	1	.809	.866
	Dementia	-.931	.587	2.518	1	.113	.394
	Mental Illness	-1.230	.701	3.079	1	.079	.292
	Substance Abuse	-1.453	.722	4.055	1	.044	.234
	Acute Illness	-.386	.842	.210	1	.647	.680
	Constant	-.593	2.527	.055	1	.815	.553

a. Variable(s) entered on step 1: PhysicalAbuse, SexualAbuse, YrsExp, EducLvl, AgeRng, DiscRec_2, DiscRec_3, DiscRec_4, ptdxRec_2, ptdxRec_3, ptdxRec_4, ptdxRec_5.

Table 26. Overall Model Hosmer & Lemeshow Test

Table 26. Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	6.632	8	.577

Table 27. Overall Model Omnibus Test of Model Coefficients

Table 26. Overall Model Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	20.398	12	.060
	Block	20.398	12	.060
	Model	20.398	12	.060

APPENDIX F: FIGURES

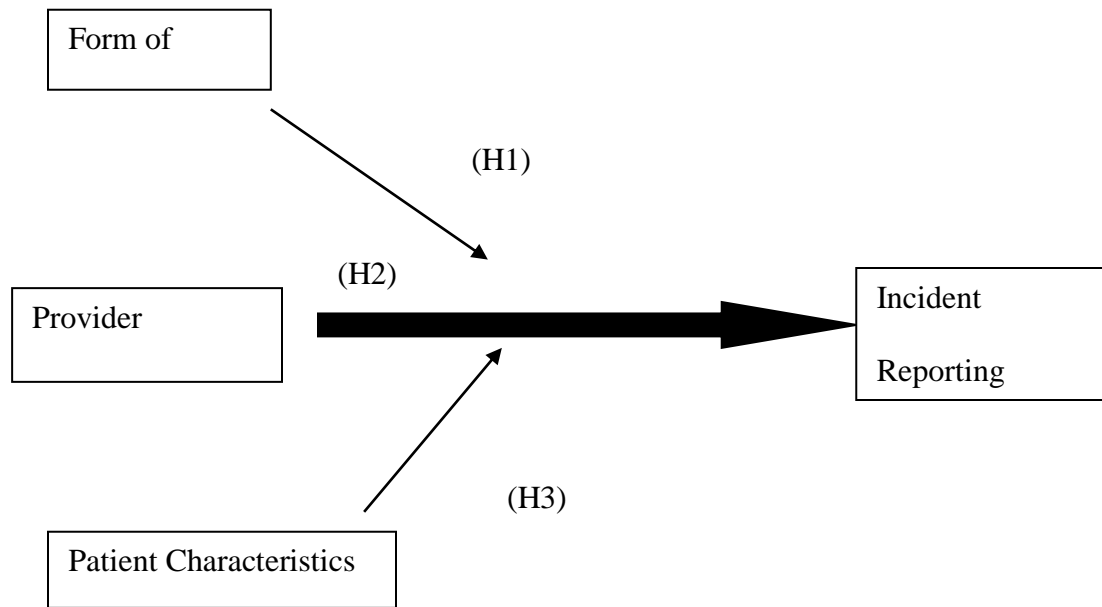


Figure 1 Theoretical Predictive Model

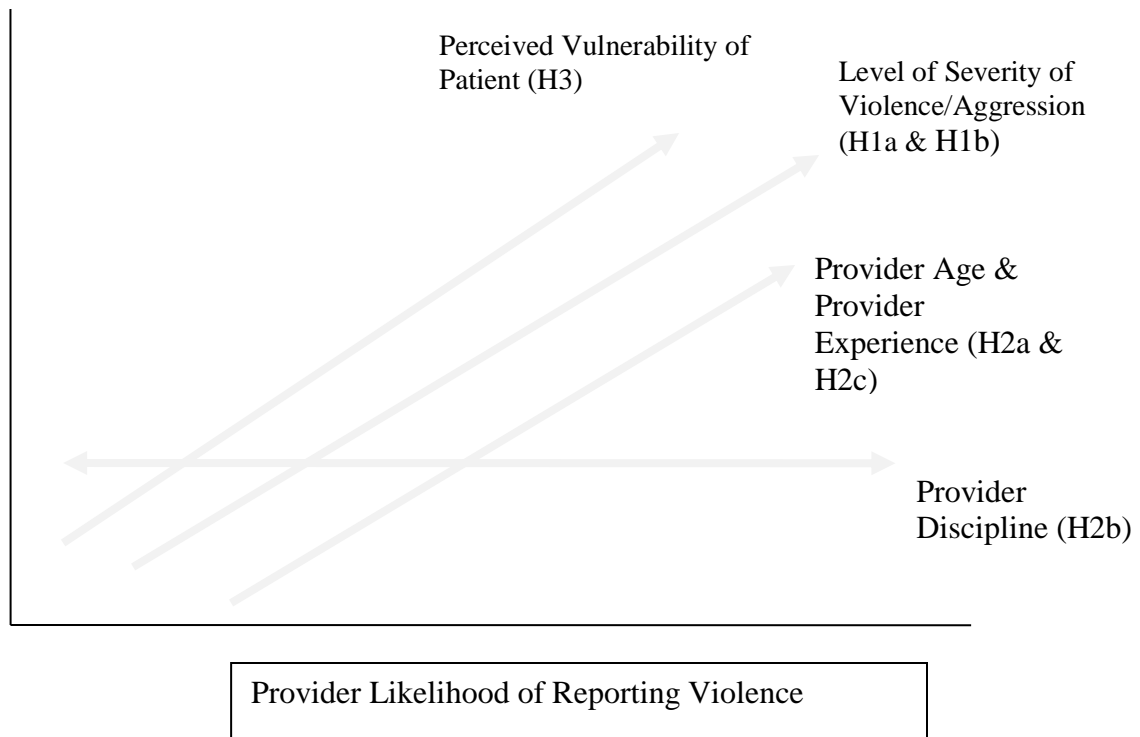


Figure 2 Hypotheses Visual Model with Variables Included

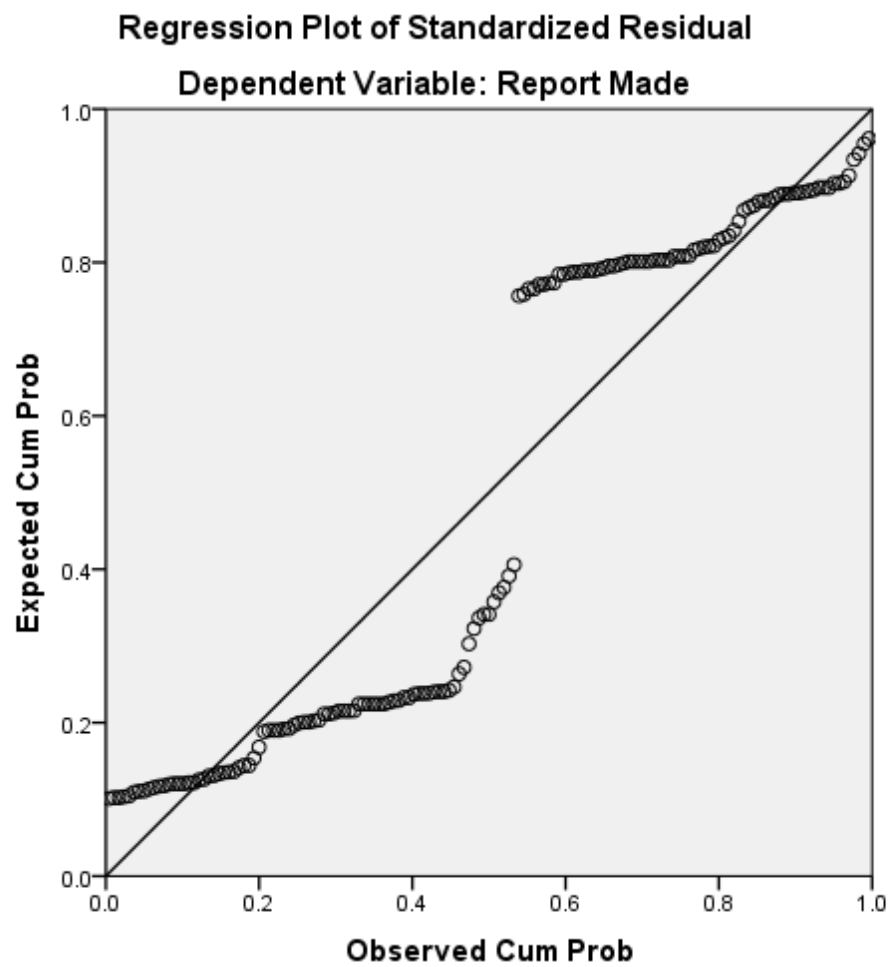


Figure 3 Residual Plot

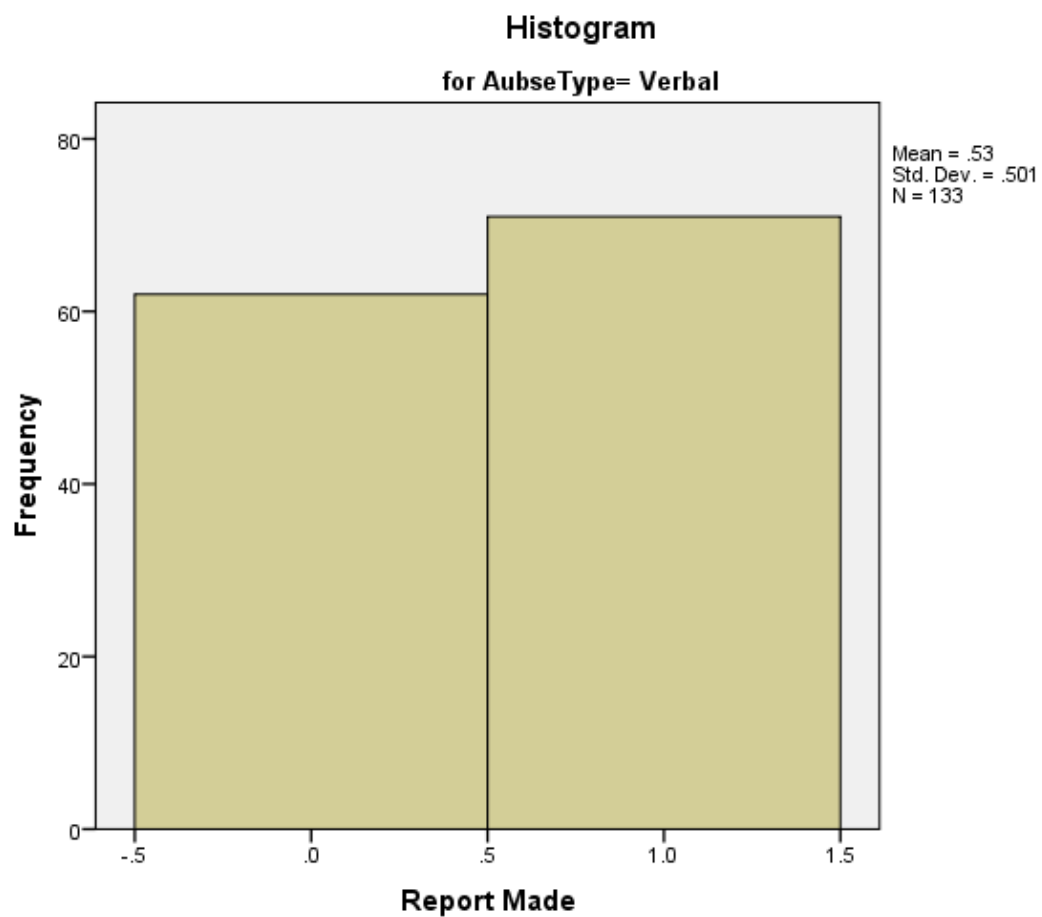


Figure 4 Reporting and Verbal Abuse

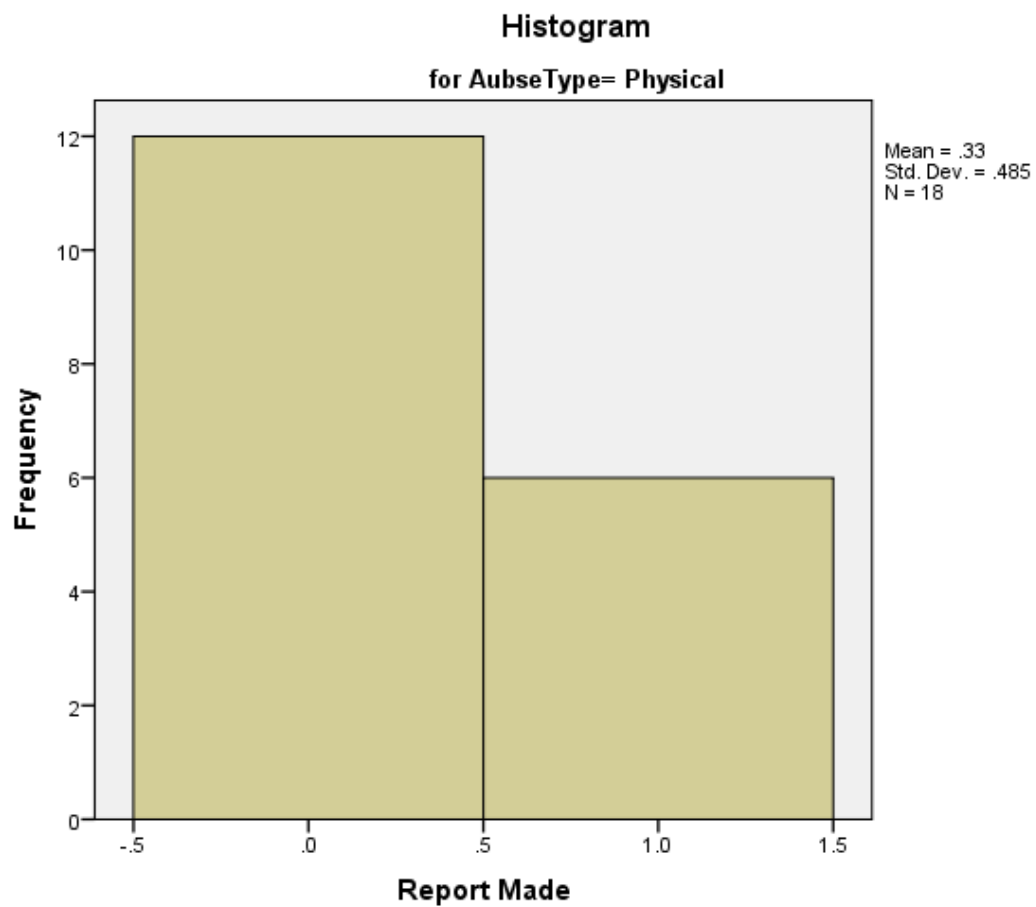


Figure 5 Reporting and Physical Abuse

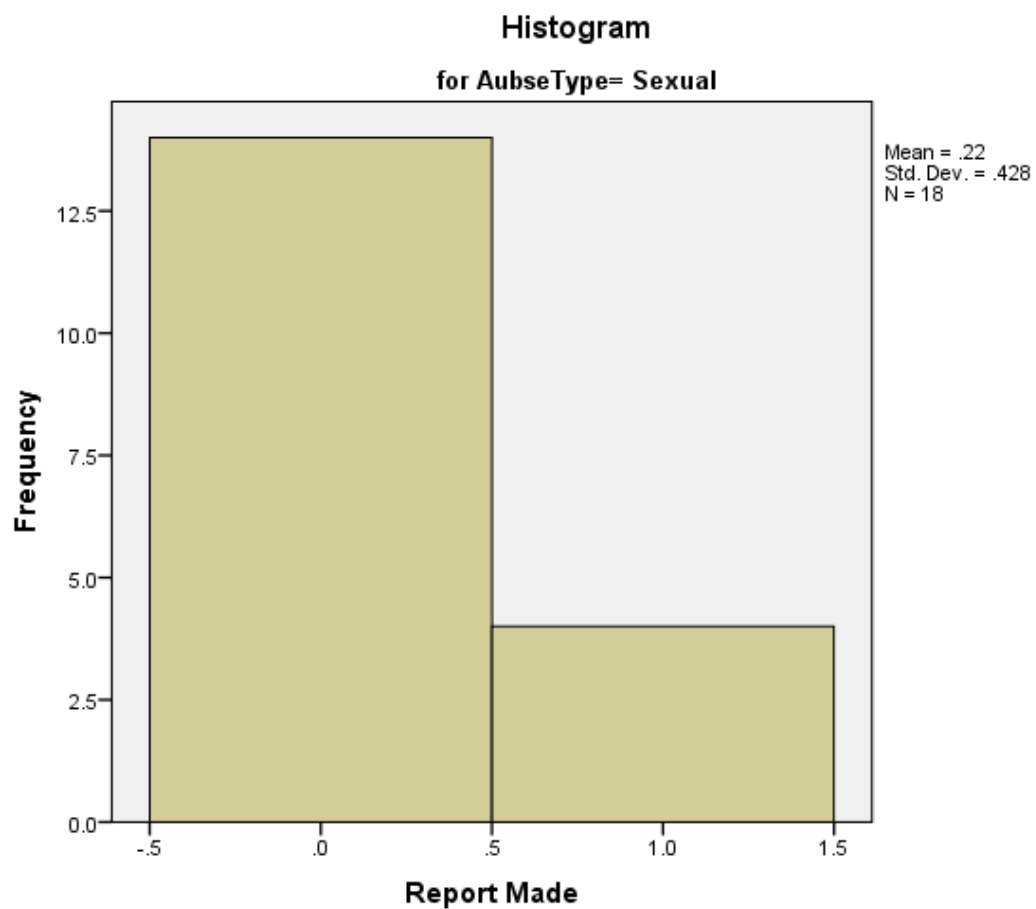


Figure 6 Reporting and Sexual Abuse

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