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Social Support, Caregiver Burden, and Anxiety/Depression among Family Caregivers of Stroke Patients

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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Abstract

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MA, Walden University, 2020

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Dissertation Submitted in Partial Fulfillment
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Abstract

Family caregivers encounter challenges when caring for relatives recovering from a stroke. Family caregivers often experience negative mental health outcomes including higher levels of anxiety, depression, and stress. The purpose of this study was to determine the extent to which years of caregiving experience, emotional and instrumental support, and caregiver burden predict anxiety and depression among family caregivers of stroke patients. The caregiving stress process model theoretical framework guided the research. This quantitative study used a non-experimental correlational research design. Participants were recruited using Survey Monkey and included a non-random convenience sample of 111 family caregivers of stroke patients who completed an online survey. Results from the two hierarchical multiple regression analyses revealed that emotional support and caregiver burden were significant predictors of anxiety and depression. Higher levels of emotional support predicted lower levels of both state anxiety and depression. Higher levels of caregiver burden predicted higher levels of both state anxiety and depression. The findings of this study may lead to positive social change through assisting health educators to develop social support interventions and strategies to counter the challenges experienced by family caregivers of stroke patients.

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Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Introduction

Caregiver burden is not only stressful but can also lead to mental health issues (Peng et al., 2022; Zwar et al., 2023). The purpose of the current study was to determine the extent to which components of social support (emotional, instrumental) and caregiver burden predict anxiety and depression among family caregivers of stroke patients. This study is important because informal caregivers are susceptible to caregiver burden, defined by the Modified Caregiver Strain Index as symptoms linked to depression, grief, fatigue, financial hardship, and social relationship changes that may negatively impact the quality of care for stroke survivors and the psychological well-being of the caregiver (Thornton & Travis, 2003; Zwar et al., 2020, 2023). This study determined the extent to which components of social support (emotional, instrumental) and caregiver burden predict anxiety and depression among family caregivers of stroke patients. Health educators and professionals may use the results of this study to develop social support interventions and strategies to mitigate caregiver burden and its negative impact on psychological distress among informal (family) caregivers.

Chapter 1 includes the background, problem statement, purpose of the study, research questions, and the theoretical framework. The definitions, assumptions, scope and delimitations, limitations, and significance of the study are also discussed. Chapter 1 concludes with a summary of the main points before transitioning to Chapter 2.

Background

Stroke is the fifth leading cause of death and disability in the United States (Herpich & Rincon, 2020). An estimated 790,000 Americans suffer a stroke annually (Laffoon & Nathan-Roberts, 2018). Informal caregivers are family members who act as liaisons between health professionals and the families of stroke survivors who frequently lack the same level of education or experience as their professional counterparts (Bierhals & Paskulin, 2019). Caregivers play a significant role in the treatment, recovery, and mental, as well as emotional, well-being of stroke patients (Krishnan et al., 2018). There are mental, emotional, physical, and monetary effects on stroke patients' informal caregivers that are instrumental to their family member's recovery as they are the main source of care (Krishnan et al., 2018; Li et al., 2017).

There is an abundance of research focused on informal caregiver burden and its relationship with mental health symptoms such as anxiety, depression, and stress **(**Del-Pino-Casado et al., 2021; Hall et al., 2019; Zhao et al., 2021). Caregivers' emotional well-being tends to fluctuate, as they have to shoulder the responsibilities of taking care of stroke patients (Hall et al., 2019). The responsibilities entrusted to family or informal caregivers result in increased anxiety, depression, and stress that can affect their emotional well-being (Hall et al., 2019). There is evidence that shows that caregiver burden is a widespread problem that is affecting most informal caregivers (Hall et al., 2019). Informal caregivers have been found to be more susceptible to mental health symptoms and emotional disorders due to the nature of caregiving (Marima et al., 2019). There is a gap in the literature regarding the relationship between different social supports (emotional, instrumental), caregiver burden, and anxiety/depression. The need for this study is reflected in the potential to improve the psychological well-being of informal caregivers, which will lead to more effective care for recovering stroke patients. The results of this study may be used to develop social support interventions and strategies to mitigate caregiver burden and its negative impact on psychological distress among informal (family) caregivers and improve the quality of care they provide.

Problem Statement

More than one in every five Americans (21.3%) is a caregiver, both formal and informal (AARP & National Alliance for Caregiving, 2020). Approximately 3.5 million stroke survivors are cared for by others, including family members, companions, and compensated caregivers (Krishnan et al., 2017). Depending on the data collection period, interpretation of caregiver and population analyzed, the percentage of informal caregivers in the United States adult population varies from 12% to 29% (Achilike et al., 2020; Roth et al., 2009). Informal caregivers of stroke survivors are frequently unprepared for their role, which can have a negative impact on their well-being. A deeper understanding of the caregiving burden is required to identify caregivers who require the most assistance. Consequently, stroke care plans should prioritize stroke survivors and include informal caregivers as an essential component of treatment regimens.

Informal caregivers of stroke patients, as the principal provider of assistance for their family member, face mental, emotional, physical, and financial consequences (Krishnan et al., 2017; Li et al., 2017). Because of the stress of providing care, many family caregivers of stroke patients experience anxiety and depression (Erler et al., 2019).

Over the last five years, research has focused on the relationship between caregiver burden and mental health issues among both formal (professional) and informal (family members) caregivers of a variety of patients including stroke victims (Achilike et al., 2020; Earlier et al., 2019; Zhao et al., 2021). However, there is a lack of research examining the role of specific types of social support on the psychological well-being among caregivers of stroke patients.

Purpose of the Study

The purpose of this quantitative study was to determine the extent to which social support (emotional, instrumental) and caregiver burden predict anxiety and depression among family caregivers of stroke patients. The study used a nonexperimental correlational design. The independent variables include social support (emotional, instrumental) and caregiver burden. The dependent variables are anxiety and depression symptoms.

Research Question and Hypotheses

RQ1: What are the combined (R^2) and relative (sr^2) effects of social support (formal, informal, emotional, instrumental) and caregiver burden in explaining the variance in anxiety and depression among family caregivers of stroke patients?

H_{01}: Social support and caregiver burden do not predict anxiety and depression.

H_1: Social support and caregiver burden do predict anxiety and depression.

RQ2: What are the combined (R^2) and relative (sr^2) effects of social support (emotional, instrumental) and caregiver burden in explaining the variance in depression among family caregivers of stroke patients?

H_{01}: Social support and caregiver burden do not predict depression.

H_1: Social support and caregiver burden do predict depression.

Theoretical Framework for the Study

The theoretical framework was the caregiving stress process model (Pearlin et al., 1981). Based on the sociological viewpoints of stress, and whether caregivers experience symptoms such as depression or anxiety as a type of coping mechanism, the caregiving stress process model discusses the relationship between caregiver perceived-stress, depression, and their most often used coping mechanisms. The caregiving model explains informal caregiving processes that can affect caregiver health and the outcomes related to physical and mental health (Pearlin et al., 1981). The theory focuses importantly on the impact of the caregiving stressors on the receivers' experiences and the feelings of caregiving (Son et al., 2007). Primary stressors originate from the needs of the patient in terms of the nature of the conditions and care and the magnitude of those needs. Secondary stressors involve the financial, social, and personal situations of family caregivers, which can stress them out throughout the course of their duties (Mei et al., 2018). The caregiving stress process model was the most suitable theoretical framework because of its ability to compartmentalize caregiver stress and associated symptoms of anxiety and depression symptoms. Perlin et al.'s (1981) caregiving stress model is compatible with the study because of the focus on depression and anxiety symptoms in informal caregivers. Chapter 2 provides a more-in-depth discussion and analysis of the caregiving stress process model.

Nature of the Study

I used quantitative methodology for the proposed study. Field and Miles (2014) stated that quantitative methods can imply or infer evidence for the soundness of a theory using the measurement of different variables that can produce numeric outcomes. The numeric outcomes are generated using statistical tests and inferential statistics (Field & Miles, 2014). Quantitative methodology is most appropriate for the study because the variables are continuous and measured on an interval scale (Field & Miles, 2014). The design was a nonexperimental correlational, with the objective of identifying relationships between variables (Cohen et al., 2014; Field & Miles, 2014). This nonexperimental correlational study examined the extent to which social support (formal, informal, emotional, instrumental) and caregiver burden predict anxiety and depression among family caregivers of stroke patients.

The independent variables include social support (formal, informal, emotional, instrumental) and caregiver burden. Social support is measured in two ways: formal/informal and instrumental/emotional. The AGES Caregiver Survey (ACS; Shiba et al., 2016) was used to measure formal and informal social support. The MacArthur Battery (MAB; Gurung et al., 2003) was used to measure instrumental and emotional social support. Caregiver burden was measured using the Modified Caregiver Strain Index (MSCI, Thornton & Travis, 2003). The dependent variables are anxiety, measured using the Strait-Trait Anxiety Inventory (STAI; Spielberger et al., 1983) and depression, measured using a shortened form of the Geriatric Depression Scale (GDS-S; Brink et al., 1982; Yesavage et al., 1983).

Definitions

Anxiety: The State-Trait Anxiety Inventory (STAI) defines anxiety as a combination of symptoms linked to feelings of tension or paranoia, as well as whether somebody is content or happy with their life; feelings of indecisiveness, a lack of confidence, and a lack of comfort are associated with high levels of anxiety (Spielberg et al., 1983).

Caregiver burden: The Modified Caregiver Strain Index (MSCI) defines caregiver burden as being associated with symptoms linked to lack of sleep, physical strain from caregiving duties, feelings of confinement, changes in social or familial relationships, stress from financial strain, and an overall feeling of being overwhelmed (Thornton & Travis, 2003).

Depression: Depression is a mood disorder that causes a persistent feeling of sadness and loss of interest and can interfere with daily activities, which are measured using the Geriatric Depressive Scale (GDS; Scogin et al., 2000).

Emotional support: Emotional support comes in the form of emotional and psychological support from either a professional or a family member (Kazemi et al., 2021).

Informal Caregivers: Informal caregivers are family caregivers who serve as connections between health professionals and family members of stroke survivors. Family caregivers are caregivers who do not possess the same level of training or experience as their professional counterparts (Bierhals & Paskulin, 2019).

Instrumental support: This refers to support with daily tasks from family members who can assist informal caregivers. These include daily chores, giving informal caregivers a ride, or providing basic assistance at home (Gertrude et al., 2019; Kazemi et al., 2021).

Formal Caregivers: Professional caregivers are the professional and formal counterpart of informal caregivers. Examples of professional caregivers include medical professionals and experts like doctors, nurses, and general practitioners. Professional caregivers may help provide support to their informal counterparts through training, information, valuable data, and capacity building (Seidel et al., 2019).

Social support: Social support refers to additional help, resources, materials, and manpower provided to informal caregivers by their professional counterparts, loved ones, or institutional bodies. Examples of social support include education, care assistance, home accommodation, informational support, emotional and mental support, and training (Akosile et al., 2018; Gertrude et al., 2019; Kazemi et al., 2021).

Formal support: Professional support, which involves informal or family caregivers receiving support from professionals like doctors or nurses (Akosile et al., 2018; Gertrude et al., 2019; Kazemi et al., 2021).

Stroke: Stroke is a medical emergency where oxygen supply to the brain is cut off, leading to brain tissue damage. Long term effects of strokes include paralysis, speech disability, muscle weaknesses, and reduced functionality of bodily operations. The long-term impact on stroke survivors by a stroke attack requires the employment of professional or informal caregivers to help them recover or prolong their survival.

(Herpich & Rincon, 2020; Laffoon & Nathan-Roberts, 2018; Puthenpurakal & Crussell, 2017).

Assumptions

There is a central assumption in the study that participants may have some level of stress or symptoms of either anxiety and/or depression, owing to the duties entailed in caregiving of a stroke patient (Zhao et al., 2021). The main assumption is that informal caregivers are a reliable source of providing information about their psychological state, but simultaneously they may exhibit symptoms of stress and lack of sleep, potentially impacting the validity of data. I also assumed that participants would follow the instructions for completing the surveys accurately. Similarly, I assumed participants would be truthful and accurate in their responses. Participants were told that the online survey is anonymous to ensure that they felt comfortable providing sensitive information.

Scope and Delimitations

The goal of this study was to determine the extent to which social support (formal, informal, emotional, instrumental) and caregiver burden predict anxiety and depression among family caregivers of stroke patients. Research has indicated that there are many factors influencing how family stroke caregivers deal with their situations. Caring for a family member who is recovering from a stroke has been shown to take an emotional, mental, and physical toll on family caregivers' well-being (Caro et al., 2018; Gertrude et al., 2019). Caregiver burden can gradually build up, especially if they do not have an adequate support network. Thus, this study focused on specific types of support and caregiver burden as factors that may predict levels of anxiety and depression among family caregivers of stroke patients. The population for this study was family caregivers, also known as informal caregivers. The study did not include formal (professional) caregivers. Thus, the results may not be generalizable to all types of caregivers. In addition, the study focused on family caregivers of stroke patients; it is possible that caregiver burden is more pronounced when caring for family members with other disease or illness (e.g., Alzheimer's disease, cancer, etc.).

Limitations

Quantitative methodology with convenience sampling may have limited generalizability as participants were not be randomly sampled. I assumed that participants would answer as honestly as possible, but I also recognize that there was a risk of participants answering questions defined by social desirability bias (Larson, 2019). Social desirability bias occurs when participants are compelled to provide answers that they feel are socially favorable, even if they are not honest, to present themselves in the best possible light. However, the anonymity of the survey was stressed with the hope of reducing social desirability bias. The informed consent form included a statement regarding the anonymity of the data and that personally identifiable collection would not be collected.

Significance

Caregiver burden is a prevalent problem among family caregivers of stroke survivors as it may contribute to depressive and anxiety symptoms (Inci & Temel, 2016). Therefore, caregiver burden and its relationship to different social support levels is important to study to identify predictors for mental disorders or mental health symptoms.

Caregivers typically require support to provide the best care for stroke patients in recovery (İnci & Temel, 2016). This study is unique in that it will extend previous research by examining the extent to which different types of social support and caregiver burden predict anxiety/depression among family caregivers of stroke patients. Health educators and professionals may use the results of this study to develop social support interventions and strategies to mitigate caregiver burden and its negative impact on psychological well-being among informal (family) caregivers of stroke patients.

Summary

The purpose of this quantitative study was to determine the extent to which social support (formal, informal, emotional, instrumental) and caregiver burden predict anxiety and depression symptoms among family caregivers of stroke patients. The study is significant as more than 3.5 million stroke survivors are cared for by informal caregivers at risk of caregiver burden (Krishnan et al., 2017; Zwar et al., 2023). A nonexperimental correlational design was used that included the independent variables of social support (emotional, instrumental) and caregiver burden; anxiety and depression symptoms are the dependent variables. This study aimed to extend previous research by examining if different social support and caregiver burden predict symptoms of anxiety and depression among family caregivers of stroke patients.

Chapter 2: Literature Review

Introduction

There is a high risk for caregivers being subjected to different strains and anxieties due to the responsibilities that go along with taking care of a patient throughout an extended recovery period. These symptoms, according to Kazima et al. (2021), subject caregivers to developing feelings of caregiver burden, defined by feelings of exhaustion that result from both limitations and responsibilities of their caregiver role. The purpose of the study was to determine the extent to which social support and caregiver burden predict anxiety and depression among family caregivers of stroke patients.

The special circumstances and needs of a stroke survivor patient fluctuate from physical (strolling, move from bed to seat, seat to latrine), correspondence (nonverbal and verbal with relatives, companions), nursing (garments change, feeding individuals, helping them use the toilet through the latrine), and mental and emotional alterations to adjust to the results of stroke and monetary losses (loss of work, hospital expenses; Krishnan et al., 2018; Li et al., 2017). Various authors have suggested that caregiver stress might affect the recuperation and effective recovery of stroke patients (Akosile et al., 2018; Bhattacharjee et al., 2012). Therefore, it is essential to comprehend the multifaceted aspects of the burden and find ways to alleviate it to ensure a successful stroke survivor rehabilitation process. A healthy environment and caregiver improve a stroke patient’s recuperation.

Stroke is one of the most significant causes of death and disability in the United States (Jaracz et al., 2012). Approximately 790,000 people in the United States have a stroke each year (Laffoon & Nathan-Roberts, 2018). Family caregivers of stroke patients may suffer from anxiety and depression due to the burden associated with providing care for stroke patients (Erler et al., 2019). According to Tosun and Temel (2017), stroke is a significant cause of disability and dependency in carrying out most activities of daily living. Stroke rehabilitation and care have become extremely important due to the increased chance of surviving after a stroke. According to Del-Pino-Casado (2019), the process of caregiving is linked to adverse consequences for family caregivers physical and mental health. Family caregiver burden is multifaceted, including physical, social, mental, and monetary elements.

Chapter 2 begins with a review of the literature search strategy. There is also a discussion of the theoretical framework, the caregiving stress process model. Several areas of literature that are discussed include the needs of stroke patients, caregiver burden and stroke patients, caregiver mental health, support for caregivers, professional caregivers, and family caregivers.

Literature Search Strategy

The search for relevant literature included the following databases: EBSCOhost, Google Scholar, Medline, APA PsycInfo, and Sage. The following list of keywords were used in these search engines: *family caregiver, mental health, caregiver burnout, caregiver burden, professional caregiver, stroke victims, caregivers and stroke patients, stroke patient burden, feelings of caregiver burden, professional caregiver burnout,* and *social support.* Most of the sources used for this research project were published within the last 3 to 5 years to maintain both recency and significance in the quality of information utilized for the proposed research study.

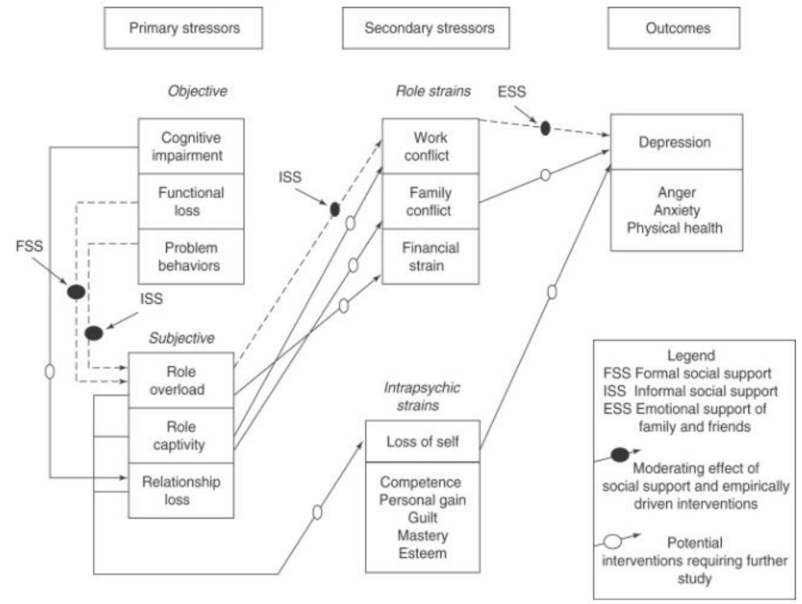
Theoretical Foundation

Caregiving Stress Process Model

The theoretical framework selected for this study is the caregiving stress process model by Pearlin et al. (1981; Figure 1). The caregiving stress process model is represented by caregivers' perceived stress and depression, in addition to the techniques used by caregivers to cope. Pearlin et al.'s (1981) stress process model is based on a sociological approach to stress and whether a caregiver experiences symptoms such as depression or anxiety as a reaction to the stress they experience while on the job. Furthermore, this model explains informal caregiving processes that can affect caregiver health (Pearlin et al., 1981). This approach holds that the caregiver's life is directly impacted by likely harmful surrounding demands (primary stressor-subjective). For example, a loss of interpersonal relationships may lead to an informal caregiver becoming overwhelmed. These immediate effects may be extended to other areas (role strains-secondary stressors), such as interference with family activities and employment, thus increasing the possibility of substandard adaptation (physical or mental health outcomes). However, when coping skills and social support are leveraged, caregivers can curb primary stressors, limiting their adverse effects on relationships, roles, and well-being. Despite the model's development to suit caregivers of Alzheimer's patients, its fundamental principles increase its applicability to other caregivers and the elderly population with different impairments and disabilities, as shown below in Figure 1 (Pearlin et al., 1981).

Figure 1

Caregiving Stress Process Adapted from Pearlin et al. (1981)



The caregiving stress process model focuses on the impact of the caregiving stressors on the receivers' experiences and caregivers' feelings of during their job (Son et al., 2007). This highlights all the activities and experiences that accompany offering support and assistance to friends and close relatives who are not capable of assisting themselves. This is a form of care for someone, a commitment to help that person, usually based on the closeness of the caregivers and the affected person (Pearlin et al., 1990).

According to Pearlin's model, there are both primary and secondary stressors that caregivers encounter. Primary stressors originate from the needs of the patient related to the nature of the condition and care and the magnitude of those needs. Furthermore, a lack of social support can act as either a primary or secondary source of stressors. Primary stressors include the cognitive status of caregivers, which entails the challenges experienced by the caregiver and the relationship with the patient, the problematic behavior of the patient, the level of dependency on the caregiver, the activities that the patient relies on the caregiver to assist with, and those offering the caregiving services. (Pearlin et al., 1990). Secondary stressors are those problems that arise from the process of caregiving and the primary stressors. It involves two concepts: role strains and intrapsychic strains. Role strain is found in roles and events that focus on the caregiving situation. The family unit acts as the origin of this strain. Intrapsychic strain is mainly attributed to incompetence, the adequacy of the performance of those playing the role of caregiving (Son et al., 2007).

There are various examples in the literature that have utilized Pearlin's caregiving stress process model. For example, Xu et al. (2021) utilized Pearlin's model to test the link between caregiver burden and caregiver intensity, which is defined by their work capacity and number of hours spent working. This is significant because elements of caregiver burden can overlap with those of caregiver burnout. Xu et al. (2021) conducted their study using the Pearlin model in the context of testing different indicators for various modes of social support, including supports from social networks, the support they received, and their feedback to said support. The results highlighted that social support and social networks played a crucial role in moderating the relationship between hours spent and caregiver burden, such that social supports helped alleviate caregiver burden (Xu et al., 2021). Nah et al. (2022) also used the stress process model to understand perceived gratitude, role overload, and mental health among spousal caregivers. Nah et al. (2022) found that greater perceived gratitude was associated with higher overall levels of well-being and higher role overload was related to poorer psychological well-being. In addition, Kirk et al. (2021) utilized Pearlin's model to examine the prevalence of distress among caregivers of cancer patients distress or anxiety experienced by cancer patients. Results revealed that 96.24% of caregivers documented a clinically instrumental level of distress, and 66.74% were severely distressed. Being a woman, self-reported discontent, dissociation from routine activities, sleep problems, and familial problems were strongly associated with increased levels of distress, which were significant contributors to caregiver burden. These studies demonstrate the versatility of utilizing Pearlin's model as the core theoretical framework for studies examining caregiver burden and social support.

Literature Review Related to Key Variables

There is evidence that suggests the number of burdens placed on caregivers affects the quality of care being given to stroke victims and recovering patients. Martins et al. (2019) reported that the number of people experiencing incident strokes has increased by 81% from 1990 to 2017. Martins et al. (2019) suggested that despite efforts to make strides in improving the situation for stroke victims or patients, substantial problems persist in the widespread use of acute and post-acute stroke care management. This also has implications for the burden placed on family caregivers of stroke patients.

In the next section, I review the needs of stroke patients and how that might impact caregiver burden.

Needs of Stroke Patients

There are different dimensions and areas that cover the needs of stroke patients, whether physical or emotional. Krishnan et al. (2017) listed three meta-dimensions in their study: practical body requirements, action, and participatory necessities, and environmental or natural requirements. The subthemes under these meta-topics align with the international functioning, health, and disability classification model. These meta-topics matter to both the well-being of stroke survivors and their caregivers, meaning that the needs of stroke patients are tied to the number of resources made available to their caregivers.

Physical therapy is the principle need for stroke survivors. Krishnan et al. (2017) discussed the significance of assistive gadgets, shelter, and accessibility. Following deficiencies post-stroke, the expanding need for convenience incorporates a need for portability gadgets like sticks, wheelchairs, walkers, and well-being gadgets. The utilization of assistive gadgets and proper facilities diminishes the caregiving burden and boosts the survivors' self-determination. Restoration among stroke patients principally includes physical recuperation. The point of exercise-based recuperation is to have the stroke patient relearn straightforward motor exercises, which include for example strolling, sitting, standing, resting, and the most common of simple movements.

Physical therapy aligns with occupational therapy in several different areas. Occupational therapists assist individuals with improving their autonomy with an emphasis on valuable or useful exercises (Krishnan et al., 2017). Expanding the scope of movement and building muscle is significant, yet occupational therapists attempt to determine what the patient views as significant and what exercises they need to perform. Among the ways that an occupational therapist can assist someone recuperating from a stroke is by working on their ability to do every day errands. Occupational therapists call these undertakings activities of daily living. These activities include washing, toileting, dressing, eating, cooking, preparing, dressing, and driving.

When stroke patients are admitted, their nutritional status gradually deteriorates. It is important to conduct nutritional evaluations of the patient during admission hours to assess nutritional status and dysphagia. Panebianco et al. (2020) classified neurogenic dysphagia as difficulty swallowing, often resulting from stroke. Patients with or without gentle dysphagia can have their overall lifestyles adjusted by adjusting the diet’s texture. This diet adjustment typically begins with an oral eating regimen, and wholesome oral supplementation will be utilized to ensure that the patient’s nutritional requirements are properly met.

Social help and essential reassurance are basic needs for stroke survivors. Li et al. (2017) conducted an empirical study in China that explored the behaviors and attitudes of stroke survivors and their willingness to return to their normal lives. Stroke survivors showed a longing to get back to their full pre-stroke scope of exercise and jobs, resuming function in their own lives and in their communities. The findings showed that stroke survivors whose self-expression was limited resulted in the inability of family caregivers to focus on the stroke survivors needs. Li et al. (2017) found that family caregivers had questions about caring for stroke patients related to government recommendations regarding mental health support. This implied that stroke survivors in China exhibited the most need for mental and emotional help and were more likely to seek mental and emotional help from their family caregivers versus seeking help from professionals like psychiatrists or physicians. Li et al. (2017) concluded that Chinese society must recognize the needs of stroke survivors to increase their willingness to return to their normal lives.

Caregiver Burden and Stroke Patients

Caregiver weight or strain is a complex phenomenon that includes physical, social, mental, and monetary variables (Gbiri et al., 2015; Gertrude et al., 2019; Hall et al., 2019). The weight of caregiver burden differs from the objective stressor aspects like monetary expenses to emotional aspects such as mental stress. The requirements of a stroke survivor shift from physical (versatility), correspondence (verbal and nonverbal), nursing (taking care of, clothing, toileting), and mental changes to their mindset adjust to the outcomes of stroke (Gbiri et al., 2015; Gertrude et al., 2019; Hall et al., 2019). The caregiver needs to adjust to a double liability of caring for a reliant stroke survivor and making changes in their own life. Consequently, because of its incapacitating and persistent nature, caring for stroke survivors frequently places significant weight on their caregivers.

Hall et al. (2019) conducted a study focusing on the anxieties and emotions of family, professional, and service caregivers of stroke patients. The study consisted of intervention mapping drawing evidence from two systematic reviews and 33 qualitative interviews. There were four overall stages of the mapping process: 1) assessment of needs, 2) identification of outcomes and objectives, 3) theoretical method selections, and 4) creation of a program plan. Physical, mental, social, emotional, and monetary anxieties experienced by individuals wanting to provide care for others were outlined signifying that emotions tied to caregiver burden preceded actual caregiver duties (Hall et al., 2019). The intervention observed by Hall et al. (2019) included a social support group designed to reduce caregiver burden and burnout among family caregivers of stroke patients. According to Hall et al. (2019), 25% to 46% of family caregivers experienced a significant burden inside the initial half-year of caregiving of a stroke patient. Fourteen systematic reviews from seven databases suggested that interventions may need to target both environmental and behavioral factors due to caregiver experience being influenced by their own behaviors and external surroundings. Examples may include how much help a stroke survivor may need from a caregiver, the caregiver's emotional and mental capacity to interact with the survivor's family, and means that they can balance caregiving duties with their personal life (Hall et al., 2019).

Gertrude et al. (2019) conducted a qualitative study between May and July 2018 regarding the needs of Ugandan stroke victims and the accommodations that could be made to caregivers to decrease their sense of burden. Gertrude et al. (2019) interviewed 25 primary caregivers and identified four key themes related to caregiver burden: new responsibilities, coping mechanisms and caregiver stress, limited resources, and experiences with overall patient outcomes. These themes highlighted the need for more formal support and intervention for both stroke patients and family caregivers. Caro et al.

(2018) examined the quality of life among family caregivers of stroke patients and found a moderate decrease in their quality of life. A descriptive correlational cross-sectional study was conducted using a convenience sample of family caregivers (*N* = 30) of stroke patients with data collected through a questionnaire that evaluated participant characteristics. Results showed that there was a weak correlation between caregiver burden and environmental factors (noise, lighting, and temperature) while there was a stronger connection between the quality of life and physical circumstances of caregivers. Some caregivers also emphasized the importance of training, social support, and information to increase their confidence while caring for stroke patients.

Symptoms of anxiety can also act as predictors of informal caregiver burden symptoms. del-Pino-Casado et al. (2021) conducted a meta-analysis aiming to synthesize evidence of the relationship between anxiety symptoms and caregiver burden among family caregivers. del-Pino-Casado et al. (2021) observed that increased levels of caregiver burden were determinants of clinically significant levels of anxiety among family caregivers. There was a positive correlation between symptoms of anxiety and subjective caregiver burden in the 74 articles analyzed. There was a significant association between high levels of actual reliance (i.e., how much caregivers were relied upon) and caregiver strain, and both resulted in a decrease in caregiver personal life satisfaction. The perspectives of stroke survivors' family caregivers give an essential reference to the requirements and freedoms of these patients, as the caregivers offer physical and mental help in the day-to-day routine of stroke survivors. Concerns included treatment and monetary help, adding significantly to the weight family caregivers experienced. It was also noted that providing caregivers with relevant data, guidance, and counseling would be helpful to the recuperation and recovery of stroke survivors (del-Pino-Casado et al., 2021).

Caregiver Mental Health

Marima et al. (2019) conducted a study to determine the impact of social support on the well-being of a Zimbabwean sample of family caregivers (*N* = 71) of stroke patients. Marima et al. noted that 45.1% of the caregivers were at risk for developing mental health issues like depression and anxiety. There were different factors associated with increased deterioration of mental health among the family caregivers that included stressors related to caregiving such as lost time and the financial weight of caregiving (Zhao et al., 2021). In a related quantitative study, Zhao et al. (2021) compared the degree of misery experienced by male compared to female family caregivers. Zhao et al. (2021) conducted the study to screen for anxiety and depression as risk factors among family caregivers of severe stroke patients. There was little to no difference in physiological pain among female and male family caregivers, but results did show higher scores of mental pain in both male and female caregivers. Zhao et al. (2021) found that 36% of family caregivers had anxiety, while 23% had depression. This highlighted the importance of emotional weight of sickness as a significant element of tension and despair for caregivers.

Panzeri et al. (2019) conducted a systematic review of the literature to determine the efficacy of interventions on the psychological health of stroke caregivers. Panzeri et al. focused on caregiver age and its relationship with caregiver burden. The caregiver age was associated with discouragement; older caregivers had higher levels of melancholy compared to younger caregivers. Using 45 different studies, Panzeri et al. identified three main themes in literature review: the types of interventions, techniques, and operators. Interventions that used psychological and therapeutic techniques displayed greater usefulness and efficacy in reducing the psychological burden of caregivers.

Ain et al. (2014) conducted a qualitative study focusing on the challenges faced by principal caregivers of stroke patients. Caregivers reported several challenges due to the burdens they experienced. One of the problems they cited was that the caregiving process requires a significant time commitment from caregivers. Their sleep was also affected because of the patients’ needs. Half of stroke patients were disabled, which meant they could not perform some physical tasks, putting the caregivers at risk for significant physical burden/stress. Stroke treatment is expensive and, therefore, causes financial constraints for the caregivers due to costs of medication, paying for the therapists, and personal needs (Ain et al., 2014). Most of the caregivers were males aged 30-39. The study highlighted the fact that female caregivers had heightened emotional responses to caregiver stress (Ain et al., 2014).

There are several adjustments that caregivers find themselves making related to work, family, personal life, time, social behavior, and emotional changes that become a burden to them. Depression is one of the mental health conditions characterized by intense emotional pain, feeling hopeless, and being separated from social life. It can affect both the patient and the caregiver. Stroke patients suffering from depression need intensive care, as they often fail to take medication prescribed by their physician

(American Stroke Association, 2010). Alleviation of caregiver burden can be achieved by social support for caregivers from social institutions (American Stroke Association, 2010). Anxiety occurs both for the caregiver and the patient and is caused by fear and uncontrolled feelings such as anger and frustration (American Stroke Association, 2010). The conditions that result from stroke, such as inability to walk, speak, control bowel and bladder functions, may induce fear. Neglect by family members may cause the patient to be fearful of the future, causing anxiety. Memory loss occurs in stroke patients and, therefore, need assistance learning how to speak and communicate. Concentration is also affected by the disease, requiring the caregiver to assist by interacting with them regularly (American Stroke Association, 2010).

Social Support for Caregivers of Stroke Patients

Social support has been identified as an asset with the potential of diminishing the strain of providing care to stroke patients (Akosile et al., 2018; Gertrude et al., 2019). Akosile et al. (2018) focused on informal caregiver burden as well as perceived social support in care facilities using a caregiver strain index assessment. Caregivers typically experience a more elevated level of burden without proper communal support in terms of monetary, physical, and emotional elements (Akosile et al., 2018). Akosile et al. (2018) found that the prevalence of caregiver burden among caregivers was at 96.7% with 17.9% of them perceiving low levels of social support. For the family caregivers responsible for handling intensive cases, social help from loved ones may come through family visits for family (informal) caregivers and assistance from medical services suppliers, and provision of bill support and sharing a portion of the caregivers' concerns

(Akosile et al., 2018). This entails that potentially, social support can go a long way in assisting informal or family caregivers.

Family caregivers of stroke survivors can profit from support from medical care experts, family, companions, and caregiving colleagues. Medical care experts can provide data, training, instrumental and examination support, peer data, and everyday reassurance which can provide gratuitous support to informal caregivers (Gertrude et al., 2019; Kazemi et al., 2021). Loved ones can offer help through home arrangements, food provisions, assistance around the house, and help with care arrangement. Social supports offering help during the post stroke recovery period may offset negative results through the provisions of care information (Akosile et al., 2018).

Social support assists caregivers with adjusting to their caregiving job and palliates the burden associated with caregiving. Marima et al. (2019) examined the buffering effects that social support can provide on the mental health of family caregivers. Caregivers who received help with daily living exercises or social interactions assisted in preventing minor mental ailments such as feelings of loneliness. Caregivers received the most beneficial help from the family members.

Professional Caregivers

Professional caregivers include nurses, physicians, therapists, counselors, and psychiatrists, among others. Professional caregivers are useful since they are flexible and can move from one home to another and offer care. It is instrumental to note that professional caregivers experience distress, psychological hardships, and caregiver burden just like their informal counterparts. This section focuses on literature that covers professional caregiver burden. Professional caregivers can also provide companionship to the patients in the process of care. Hence, patients tend to recover faster than those who are without some form of professional care.

Professional caregivers are able to follow the progress of the patients' treatment plans and management as demonstrated in a study that examined the quality of stroke survivor care in the professional health system (Lobo et al., 2021). Lobo et al. (2021) aimed to measure the quality of stroke care in a literature review that highlights both challenges and opportunities for the professional caregiving field. Lobo et al. concluded that professional caregiver (nurses and physical therapists) engagement with stroke patients resulted in different levels of care, underscoring an overall need to implement public health policies that would promote greater caregiver engagement. This is crucial because it means that the quality of care is inconsistent among professional caregivers.

King et al. (2010) conducted a quantitative study to identify the types and frequency of common caregiving problems among professional caregivers (i.e., doctors and nurses) and found that professional caregivers experienced several challenges such as fatigue and inability to balance work and family. Results showed that 25% to 28% of the professional caregivers experienced strain around three to four months into the research, indicating a connection between the length of time caregiving and mental pressure (King et al., 2010). Joshi et al. (2020) compared different levels of disability of stroke victims and overall caregiver burden among professional caregivers and found that greater level of disability in the stroke patient was associated with higher levels of caregiver burden.

Having more access to a variety of resources compared to their informal counterparts, professional caregivers still experienced burden or feelings of burnout.

In a longitudinal study, Kind et al. (2018) examined the risks faced by nurses, aides, and providers caregivers such as client aggression, physical or verbal abuse, and problematic behavior that could contribute to the deterioration of caregiver health. Professional caregivers reported facing high levels of both verbal and physical aggression, which contributed to higher levels of overall burnout symptoms (Kind et al., 2018). In a similar study, Gérain and Zech (2021) conducted a meta-analysis that examined the relationships between type of caregiver (informal or family caregiver and professional caregiver) and caregiver burnout. Gérain and Zech (2021) noted that the level of caregiver burden did not depend on the type of caregiver (professional or family caregiver), but rather the nature of the caregiving tasks performed and how satisfied or content patients and family members were with the quality of care. Results demonstrated that providing informal care posed a greater risk for overall caregiver burnout, owing to a lack of experience that contributed to higher levels of stress. In the context of burnout or burden for professional caregivers, role accumulation theory explains that the accumulation of responsibilities or tasks act as stressors. This would imply that the sources of stress or feelings of burnout may not differ between family and professional caregivers.

Jevne and Williams (2020) examined institutions that doctors, nurses, and other professional caregivers were involved in such as medical, educational, pastoral, law, or other related fields and how those different elements such has inpatient therapy or outpatient therapy that contributed to overall burnout. The results showed that despite the relatively greater experience of professional caregivers compared to informal or family caregivers, there were stressors that can trigger feelings of burnout or general caregiver burden because of facility constraints (e.g., budget limitations or problems with medical equipment).

Resilience as well as coping strategies play an instrumental role in helping improve job retention and reduce general burnout or caregiver burden among professional caregivers including doctors and nurses. Nevill and Havercamp (2019) surveyed direct support nursing assistants, registered nurses, and physical therapists (N = 97) in a quantitative study to determine levels of resilience, mindfulness, and coping styles while working with aggressive patients. The results showed that mindfulness was a significant factor in helping professional caregivers maintain their mental and emotional well-being. This suggested that there is an element of control and mechanisms to help professional caregivers cope with their current situations. It should be noted that there is a lack of literature that focuses on professional caregivers and stroke patients. However, the peer-reviewed studies that have focused on professional caregivers provide insight into potential stressors that can contribute to overall burnout or burden.

Other literature focusing on professional caregivers emphasizes resilience building. For example, Nieto-Carracedo et al. (2022) attributed professional caregiver burnout to a lack of perceived personal control. Using an standardized protocol, a sample of professional caregivers taking care of older adults (N = 265) were assessed to measure both their levels of optimism and external locus of control (Nieto-Carracedo et al., 2022).

The findings highlighted that more than half of resilience variance (51%) was accounted for in optimism scores and that resilience and optimism played crucial roles in ensuring that general burnout did not occur easily among professional caretakers. Yıldızhan et al. (2019), on the other hand, examined factors that led to burnout for professional caregivers taking care of Alzheimer’s patients using a cross-sectional design. Yıldızhan et al. found that there was a significant relationship between both caregiver burden and emotional burnout with higher levels of caregiver burnout predicting higher levels of emotional burnout. Feelings of burnout and caregiver burden were also linked to emotions that involved a lack of accomplishment (Yıldızhan et al., 2019). Hence, it also important to take into consideration the factors that can lead to burnout or caregiver burden among professional caregivers, that despite their experience, may not always be tied to the specifics of the patients under their care but rather their own specific circumstances.

Seidel et al. (2019) compared the likelihood of caregiver burden among professional caregivers (nursing assistant, registered nurses, physical therapists) and family caregivers for dementia patients. Their findings revealed that family caregivers were more prone than their professional counterparts to higher levels of stress due to inexperience dealing with patient cognitive impairment. While the study focused on dementia patients, links can be made to the dynamics of caregivers and stroke victims. This is because both types of patients involve low levels of cognitive awareness that may place greater stress upon caregivers and professionals alike.

Zhu and Jiang (2019) focused on the need for better coordination and teamwork between professional caregivers supporting their informal family caregiver counterparts. A convenience sample of stroke survivor and caregiver pairs (*N* = 202) were recruited from a specific neurosurgery unit, using face-to-face or telephone-based interviews. Stroke victims' overall physical functions, self-perceived views of burden, and depression were determinants of caregiver burden for both family and professional caregivers. This also suggested that both professional and informal/family caregivers of stroke patients shared caregiving experiences.

Caunca et al. (2020) conducted a mixed methods study to test a phone application and internet friendly system designed to better equip stroke caregivers and reduce caregiver burden. The application was used to act as a support system for stroke caregivers. Caunca et al. (2020) highlighted issues faced by informal or family caregivers such as a lack of training or little to no support from their professional counterparts. Qualitative data indicated that caregivers found utility with the system but voiced the need for further improvements. Furthermore, Caunca et al. (2020) reported that female caregivers experienced higher levels of depressive symptoms. The arguments and observations presented here hold some similarities to the suggestions by Zhu and Jiang (2019), namely that there needs to be a better sense of coordination and teamwork between both professional and family caregivers. Akosile et al. (2018) also proposed that there needed to be a stronger sense of coordination and unity between informal caregivers and professionals working at acute care facilities. As this section primarily focused on the dynamics between professional caregivers and the role they play with informal or family caregivers, the next section will focus on the specific challenges faced by family caregivers.

Family Caregivers

Family caregivers act as connections between health professionals and the family of stroke survivors. Because informal or family caregivers are entrusted with the health and overall well-being of a stroke survivor patient, it is important to analyze and evaluate some of the factors that may contribute as primary stressors. Informal caregivers also assist with the mobility of disabled patients (Muhrodji et al., 2021). They are capable of assisting with the physiotherapy process of the patients during rehabilitation in their homes. Muhrodji et al. (2021) conducted a qualitative study to assess both the roles and problems experienced by family caregivers of stroke patients. Muhrodji et al. (2021) observed themes related to the roles of caregivers, including connecting patients with family members and medical staff, maintaining patient health through fulfilling basic needs, and maintaining the mental well-being of stroke patients through conversation and humor. The problems of caregivers were also identified in the following themes: lack of knowledge, lack of concern or appreciation from their patient's families, suboptimal service from medical administration, physical limitations, and imperfect administrative services. Family caregivers act as the first responders during any emergency for stroke patients. They assist in the nutrition of the patients by ensuring that they access nutritious food for a speedy recovery and tracking the medication of the patients (Muhrodji et al., 2021).

Family caregivers are prone to stress due to various activities. Among these activities, dressing and bowel changes are some of the most stressful, and research suggests that a telephone social problem-solving approach between health providers and caregivers is an effective method for improving family caregivers' mental health (Bierhals et al., 2019). Bierhals et al. (2019) conducted a study that focused on assessing quality of life perceptions of spouse and non-spouse caregivers of older adult stroke survivors and found that most family caregivers without a spouse had a significantly lower quality of life regarding overall social relationships. Bierhals et al. (2019) concluded that the lack of proper communal support groups or programs for family caregivers contributed the most to feelings of burden and lower quality of life. A need for further communal and overall group support for family caregivers is recommended, as it can reduce the risk of poor-quality care for stroke survivors.

The findings outlined by Bierhals et al. (2019) were supported by Wagachchige Muthucumarana et al. (2018) who explored family caregivers' experiences of providing informal care for stroke survivors. The study found that increased workload, restricted social life, and increased physical problems were some of the stressors that contributed to increased caregiver burden among family caregivers. The study revealed the significance of communal and social networks among informal or family caregivers. The findings of Wagachchige Muthucumarana et al. (2018) are similar to those of Bierhals et al. (2019), highlighting the importance of the supportive social networks in informal or family caregiving. This supportive network is pivotal in reducing caregiver burnout.

Rohde et al. (2019) conducted a study measuring the cognitive decline of stroke survivors and the psychological well-being of their family caregivers over a 5-year period. Their findings indicated that symptoms of anxiety and depression were side effects associated with informal or familial caregiving to a stroke victim. Of the 78 family caregivers who participated, 25.5% exhibited symptoms associated with depression while 19.4% were documented with symptoms of anxiety. Rohde et al. (2019) found that stroke survivors who demonstrated symptoms of cognitive decline were more likely to have family members who exhibited more symptoms of depression or anxiety. This is to say that the conditions of a stroke survivor, their level of cognitive decline or improvement, and their quality of care can potentially affect informal caregivers' emotional and mental well-being (Rohde et al., 2019).

In a related study, Azizi et al. (2020) examined the effects of informational support for family caregivers of patients who suffered hemiplegic strokes. This quasi-experimental study utilized 78 family caregivers of survivors of hemiplegic strokes over a period of eight months to determine the general effectiveness of an intervention that provided informational support on the levels of family caregiver anxiety. Participants were assigned to either intervention (*n* = 40) and control (*n* = 38) groups. Results underscored the importance of informational support in mitigating the effects of anxiety among informal family caregivers. This is because the intervention group had a significant decrease in mean level of general anxiety compared to the control group (Azizi et al., 2020).

Another area of the literature focuses on the benefits such as social support groups or health benefits for informal caregivers in mediating the relationship between caregiver burden and psychological well-being. Informal caregivers encounter problems with their health due to the care given to stroke patients (Mei et al., 2018). Researchers in this field have suggested that there are family caregivers who actively seek out these resources to better cope with their current situation. For example, Mei et al. (2018) observed that family caregivers of stroke survivors did not only suffer from symptoms of anxiety or depression but were also capable of finding perceived benefits or positive effects from stressful caregiving situations. Using a cross-sectional correlation design, a sample of stroke survivor family caregivers (*N* = 145) were recruited from two different Chinese communities where data collection was conducted through semi-structured interviews and a series of questionnaires. Results indicated that benefits such as social support groups and health benefits had a positive effect on mitigating stress and burnout levels. Mei et al. (2018) proposed that nursing training programs and interventions should focus on the dynamics of benefit finding to help better improve the emotional and psychological well-being of informal family caregivers.

Meyers et al. (2020) discussed strategies that help build up perceived benefits for both informal caregivers and stroke survivor patients through the analysis of a recovery program for stroke patients. A program known as “Recovering Together” was discussed for preventing chronic emotional distress among patients recovering from strokes and their informal or family caregivers by utilizing cognitive behavioral principles to facilitate both interpersonal communication and resiliency during the hospitalization phase. Meyers et al. (2020) concluded that the dyadic nature of these programs provides benefits for both stroke survivors and their informal caregivers. However, in contrast to Mei et al. (2018), whose findings suggested informal caregivers seeking out perceived benefits to mitigate caregiver burden, Meyers et al. (2020) discussed the potential for intervention-based programs to minimize psychological or emotional damage in informal caregivers. Meyers et al. (2020) raised similar conclusions to that of Azizi et al. (2020) who emphasized the importance of institutional intervention, whether through awareness raising or informational support, to support informal family caregivers.

There are numerous elements that contribute to stressors, challenges, and barriers for informal or family caregivers. They may come in the form of an absence of institutional or infrastructural strategies to help support informal caregivers, a lack of group coordination or support to help them fulfill the duties outlined in their jobs, or it may involve informal caregivers’ ability to deal with the cognitive capabilities of the stroke survivors under their care.

Summary and Conclusions

Informing this study, the caregiving stress process model involves the perceived-stress and depression of caregivers in addition to the techniques used by caregivers to cope. The caregiving stress process model is based on the sociological approach to stress and caregiver experiences of anxiety or depression. The needs of stroke patients place considerable anxiety and stress on both formal and informal caregivers and increase the likelihood of burnout. I also reviewed literature on the psychological well-being of caregivers in addition to their likelihood of burnout. Literature was also reviewed that demonstrated support programs for informal caregivers with the potential to mitigate the effects of burnout. Finally, I reviewed literature focused on the effect of caregiving on both professional and family caregivers, showing a consistent relationship between caregiver burden and the stressful circumstances of their jobs in taking care of stroke survivors. In Chapter 3, I discuss the methodology utilized for the proposed research study.

Chapter 3: Research Method

Introduction

The purpose of this quantitative correlational study was to determine the extent to which social support and caregiver burden predict anxiety and depression among family caregivers of stroke patients. The independent variables include social support (formal, informal, emotional, instrumental) and caregiver burden. In this chapter, I discuss the research design and rationale followed by the methodology. Methodology includes the population, sampling and sampling procedures, and procedures for recruitment, participant, and data collection. This is followed by the discussion of the instrumentation and operationalization of constructs. The discussion about the data analysis plan and research questions will then follow. The threats to validity and ethical procedures are also discussed. A summary of the key points of the methodology conclude the chapter.

Research Design and Rationale

This study used quantitative methodology, as it is the most appropriate for examining relationships among variables. According to Field and Miles (2014), quantitative methods infer evidence for a theory through measurement of variables that produce numeric outcomes by using statistical tests and inferential statistics. I determined the extent to which social support (IV; formal, informal, emotional, instrumental) and caregiver burden (IV) predict anxiety (DV) and depression (DV) among family caregivers of stroke patients. Quantitative methods were appropriate for this study, as the variables are numeric and continuous (Field & Miles, 2014). Quantitative methodology allowed for the use of statistics to answer pre-determined null and alternative hypotheses and a priori theories involving correlations among variables (Yilmaz, 2013). This study used measures that quantify and statistical methods to answer pre-determined research questions and hypotheses, and a cross-sectional design to provide a one-time snapshot of the relationships under study.

Methodology

Population

The target population for this study was family caregivers of stroke patients in the United States. Currently, more than one in every five Americans (21.3%) is a formal or informal caregiver (AARP & National Alliance for Caregiving, 2020). Others care for over 3.5 million stroke survivors, including family members, companions, and compensated caregivers (Krishnan et al., 2017). The percentage of informal caregivers in the adult population of the United States ranges from 12% to 29%, depending on the data collection time frame, caregiver interpretation, and demographics evaluated (Achilike et al, 2020; Roth et al., 2009).

Sampling and Sampling Procedures

Data were collected from a convenience sample of stroke patients' family caregivers using Prolific to recruit study participants who met the inclusion criteria. Participants for this study were not randomly sampled and may not represent the entire U.S. population of family caregivers of stroke patients. Yin (2016) defined a convenience sample as a selection of participants to be used in a study, based on their sheer availability or accessibility. A homogenous convenience sampling is used to explicitly identify participants within the convenience sample who are purposely confined in terms of a sociodemographic background (e.g., age, culture, jobs, life experience; Jager et al., 2017). The inclusion criteria for this study are as follows: (a) family caregiver of a stroke patient, (b) at least 18 years old, (c) must have at least six months of experience as a family caregiver of a stroke patient, and (d) must reside in the United States.

A power analysis was conducted to determine the appropriate sample size for the study (Faul et al., 2007; see Appendix A). The power analysis was conducted based on the following: (1) a medium effect size of $f^2 = 0.15$, (2) alpha of 0.05, (3) power level of 0.80, and (4) with five predictors variables. A growing number of studies have examined the patient, caregiver, and social support factors that contribute to increased caregiver burden, and a systematic review of the literature revealed that the prevalence of caregiver burden was 25–54% and remained elevated indefinitely after stroke (Rigby et al., 2019). Because a search for the prevalence of caregiver burden among stroke patients in the United States found limited information, the study used a conservative effect size of 0.15 for sample size computation. Based on the results of the power analysis, a minimum sample size of 92 participants is needed.

Procedures for Recruitment, Participation, and Data Collection (as Appropriate)

I did not screen, recruit, or collect any data until the Walden University Institutional Review Board (IRB) approval was obtained. Survey Monkey was employed to recruit study participants who met the inclusion criteria. Based on the rigorous Survey Monkey audience standards for data accuracy, it is widely accepted for sample recruitment via email for research purposes. Participants first read the informed consent form, which included a description of the inclusion criteria and general purpose of the study. The informed consent form described assurance of anonymity, as no personally identifiable information were collected. Individuals who agreed to the provisions of the informed consent form by selecting “I agree” proceeded to the main survey. Those who decline informed consent were thanked for their interest in the study and redirected away from the survey’s page. Responses to the items were recorded anonymously. The survey took approximately 10 minutes to complete. After completing the survey, participants were directed to the debriefing page, which provided a full explanation of the study.

Instrumentation and Operationalization of Constructs

Modified Caregiver Strain Index

The Modified Caregiver Strain Index (MCSI; Thornton & Travis, 2003) was used to measure caregiver strain among family caregivers. The MCSI is a 13-question tool that measures strain related to providing care. There is at least one item for each of the following domains: financial, physical, psychological, social, and personal. This instrument can be used to assess individuals of any age who have assumed the caregiving role for an older adult. The MCSI is a more recent version of Robinson’s (1983) Caregiver Strain Index. The MCSI is in the public domain, but I contacted the authors for permission to use the instrument. The MCSI takes approximately 3 minutes to complete.

The MCSI was developed with a sample of 158 family caregivers providing assistance to older adults living in a community-based setting. The survey items are scored using a 3-point Likert scale: “Yes, on a regular basis;” “Yes, sometimes;” and “No.” Scoring is 2 points for each “Yes, on a regular basis;” 1 point for each “Yes, sometimes;” and 0 points for every “No” response. Caregiver strain is calculated by summing all scores, ranging from 0 to 26. The higher the score, the higher the level of caregiver strain (Thornton & Travis, 2003; Travis et al., 2003).). The internal reliability coefficient (Cronbach’s alpha) for the MCSI is slightly higher (.90) than the coefficient originally reported for the CSI (.86; Thornton & Travis, 2003). Two-week test-retest reliability for one-third of the caregiving sample (n = 53) resulted in a coefficient of r = .88 (Thornton & Travis, 2003). Correlations with scores from other tools measuring variables related to depressive symptoms (Edinburgh Postpartum Depression Scale) and anxiety symptoms (State-Trait Anxiety Questionnaire) were used to assess criterion validity. The correlation analyses revealed statistically significant relationships between scores on the MCSI and depression symptoms (r = 0.429, p = .001) and anxiety symptoms (r = 0.532, p =. 001; Feligreras-Alcalá et al., 2021).

Strait-Trait Anxiety Inventory

State anxiety was measured by state anxiety subscale of Strait-Trait Anxiety Inventory (STAI; Spielberg et al., 1983). The STAI includes 10 questions and determines the anxiety of the moment or temporary level of anxiety. The permission to use STAI is in Appendix C. Questions regarding state anxiety are answered on a 5-point Likert scale with 1 = Not at all through to 5 = Very Much So. A composite score of state anxiety is then calculated. The composite score is calculated by summing all the responses from the 10 questions. A higher score on the STAI indicates greater levels of anxiety. The STAI is in the public domain; however, I contacted them for permission to use the instrument. The STAI takes approximately 3 minutes to complete.

Spielberger et al. (1983) found that the STAI has acceptable construct and concurrent validity. Evidence for construct validity was demonstrated from correlations with other anxiety measures such as the Beck Anxiety Inventory (BAI) and the Hamilton Anxiety Rating Scale (HARS) in clinical settings ($r = 0.80$; Spielberger et al., 1983), as well as medical patients ($r = 0.92$; Spielberger, 1979). Furthermore, the STAI has been shown to have good test-retest reliability over a two-week period ($r = 0.91$; Spielberger et al., 1983). The median Cronbach's alpha reliability coefficient for the state anxiety subscale of the STAI is .92 (Spielberger et al., 1983).

AGES Caregiver Survey

The AGES Cargiver Survey (ACS) is a short survey developed by Shiba et al. (2016) to measure informal and formal support for caregivers. Social support is measured by asking, "Do you have anyone to consult when you have trouble with caregiving?" from a list of potential sources of support. Respondents are asked to select all sources of informal/formal social support they have. The authors defined informal social support as support from the caregiver's family living together, children living apart, relatives, friends, neighbors, and other non-professionals. The authors defined formal social support as support from the caregiver's family physicians, care managers (registered professionals who plan and manage the schedules for older persons with disability), home helpers, visiting nurses, public health nurses, social workers, officers in public institutions, and other professionals. The number of available sources of social support is categorized as 0, 1, and >2. It should be noted that the obtained information reflects caregiver's subjective perception of social support and may differ from actual receipt of social support. The authors did not test for validity or reliability, as it was just a one question survey enumerating all possible types of caregiver support. The AGES is in the public domain; however, I contacted them for permission to use the instrument. The AGES take approximately 5 minutes to complete.

MacArthur Battery

The MacArthur Battery (MAB; Gurung et al., 2003) assesses the frequency of emotional and instrumental support, as well as the frequency of negative interactions involving conflict or excessive demands from three sources (spouse, children, friends, and family). For this study, only emotional and instrumental support were measured. Emotional support is measured by two items (which are asked separately for one’s spouse, one’s children, and one’s close friends and relatives): “How often does/do your [spouse/children/friends and relatives] make you feel loved and cared for?” and “How often does/do your [spouse/children/friends and relatives] listen to your worries?” Similarly, two items assess the extent to which participants received instrumental support: “How often can you count on your [spouse/children/friends and relatives] to help with daily tasks like shopping, giving you a ride, or helping you with household tasks?” and “How often does/do your [spouse/children/friends and relatives] give you advice or information about medical, financial, or family problems?” Respondents answer each question on a 4-point scale that ranges from 0 (never) to 3 (frequently). For each source of support, a total score is created by summing the two items for each category informal and formal support. The MAB is in the public domain; however, I contacted them for permission to use the instrument. The MAB takes approximately 3minutes to complete.

Interitem correlations for emotional support ranged from .49 ($p < .001$) for spouse to .34 ($p < .001$) for friends and relatives. Interitem correlations for instrumental support ranged from .20 ($p < .001$) for friends and relatives to .26 ($p < .001$) for children (Gurung et al., 2003). These interitem correlations indicate that the survey has a high reliability. Furthermore, Gurung et al. (2003) tested the convergent validity of the survey, resulting in a large average variance extracted (0.68), which indicates that the survey accurately measures emotional and instrumental support.

The Geriatric Depression Scale (GDS)

The Geriatric Depression Scale (GDS) is a depression screening measure for older adults, primarily those aged 65 and older. It was created in 1983 by Yesavage and colleagues and consists of a set of questions aimed at assessing typical depressive symptoms in adults (Scogin et al., 2000). The original GDS questionnaire had 30 items with “Yes/No” response options. However, a reduced form known as the GDS-15 is frequently used in clinical practice and research, and it is this version that will be employed in the current study. The GDS-15 includes 15 questions about mood, guilt and worthlessness, sleep disorders, activity levels, eating changes, and death thoughts. Depending on the situation and the individual’s ability, the GDS is either self-administered or delivered by an interviewer. Each item is assigned a score of 0 or 1, with higher scores suggesting a higher risk of depression. A GDS-15 cutoff score of 5 or higher is often used to identify individuals at risk of depression, while further evaluation by a healthcare professional is required to confirm a diagnosis (Marc et al., 2008).

The GDS has received much research due to its reliability and validity in measuring depression in adults. The GDS has shown strong internal consistency, showing that the scale's items measure the same underlying concept. The GDS-15 has been found to have high Cronbach's alpha values ranging from 0.80 to 0.94, showing high internal consistency (Sultana et al., 2022; Wongpakaran et al., 2013). The GDS has also demonstrated strong test-retest reliability, which implies that it consistently generates consistent results over time. High correlation values between test and retest scores have been found in studies, ranging from $r = 0.74$ to $r = 0.93$, indicating that the scale is stable over a period of many weeks to months (Balsamo et al., 2018). The GDS has also demonstrated moderate to strong associations with other known measures of depression, such as the Hamilton Depression Rating Scale (HDRS; $r = 0.80$, $p < .001$) and the Beck Depression Inventory (BDI; $r = 0.86$, $p < .01$), which indicates good convergent validity (Balsamo et al., 2018).

Data Analysis Plan

The quantitative data analysis for this study was performed using the Statistical Package for the Social Sciences (SPSS) for Windows Version 28. Researchers in the educational as well as social and behavioral sciences use SPSS software extensively (Hinton et al., 2014). The advantage of using SPSS is that it is user friendly and enables the researcher to export data from Microsoft Excel easily (Kulas, 2009). Descriptive analysis was conducted to characterize the demographic variables of the participants as well as their responses to the survey. Descriptive statistics such as frequencies, percentages, means, and standard deviations were also computed for each variable.

Because multiple linear regression analysis is a parametric test, certain assumptions must be met. The assumptions are as follows: 1) dependent variable/s should be continuous, 2) independent variables should be continuous, 3) independence of observations, 4) no significant outliers, 5) homoscedasticity, 6) linearity, 7) normality, and 8) multicollinearity. A Kolmogorov-Smirnov test was performed in order to detect if all variables comply with the normality assumption (Siddiqi, 2014). Second, a test for homogeneity of variance was conducted using Levene's test that investigates a constant variance of error for the independent variable, by plotting residuals versus predicted values, and residuals versus independent variables (Parra-Frutos, 2013). If the scatterplots of the variables are pattern-less, it suggests that the error is consistent across the range of predicted values hence the assumption is met. The linearity test involved producing scatterplots (Sedgwick, 2015). Lastly, a test for outliers was conducted through visual inspection of histograms and boxplots (Huber & Melly, 2015).

Hypothesis testing was done on all analyses with a 0.05 level of significance. This means that all *p*-values for multiple linear regression analysis were assessed using a 0.05 alpha level. A *p*-value of less than 0.05 dictates that there is a statistically significant relationship between the predictor and criterion variable, and that the null hypothesis is rejected, whereas a value of greater than 0.05 dictates that there is no statistically significant relationship between the study variables being examined.

Research Questions and Hypotheses

RQ1. What are the combined (R^2) and relative (sr^2) effects of social support (formal, informal, emotional, instrumental) and caregiver burden in explaining the variance in anxiety and depression among family caregivers of stroke patients?

H_{01}: Social support and caregiver burden do not predict anxiety and depression.

H_1: Social support and caregiver burden do predict anxiety and depression.

The quantitative data analysis plan will be hierarchical multiple linear regression analyses.

RQ2: What are the combined (R^2) and relative (sr^2) effects of social support (emotional, instrumental) and caregiver burden in explaining the variance in depression among family caregivers of stroke patients?

H_{01}: Social support and caregiver burden do not predict depression.

H_1: Social support and caregiver burden do predict depression.

Years of experience (covariate) was first tested to determine if it had any significant contributions in predicting anxiety or depression. This variable was entered into Block 1 in the hierarchical regression model. The theoretical framework and relevant literature suggest that different types of social support may be the strongest predictors of mental health issues among caregivers. Therefore, the predictor variables related to social support variables (emotional and instrument) were then entered (Block 2) into the regression model followed by caregiver strain (Block 3).

Regression analysis is a statistical technique that predicts the value of a dependent variable based on the value of one or more independent variables (Creswell, 2013).

Specifically, multiple linear regression analysis is used for two or more independent variables. The multiple regression model included social support (formal, informal, emotional, instrumental) and caregiver burden as the predictor variables, and anxiety/depression as the outcome variables.

Threats to Validity

When designing a study, a researcher must consider threats to both the external and internal validity and determine how these threats will be addressed. External validity refers to the generalizability of the results; internal validity refers to the extent to which the study produces results that were not influenced by other factors (Frankfort-Nachmias et al., 2014). The internal consistency of the five instruments that used in this study have already been discussed. Previous research has demonstrated that all instruments have a relatively high degree of internal consistency, suggesting the results obtained from using these instruments are likely not due to the influence of other factors.

Other potential threats to the internal validity of a study include changes in instrumentation, participant selection, maturation, and the administration of multiple tests (Da Costa & Schneider, 2016). To account for these influences on the credibility of the study's findings, all participants were issued the same five instruments or one entire survey. To prevent the results from being influenced by any prior testing, participants were asked to complete the survey only one time.

Selection bias is another threat to the internal validity of a study (Da Costa & Schneider, 2016). Studies in which researchers use convenience sampling, such as the present study, often run into issues with selection bias, as the study participants do not necessarily constitute a representative sample of the target population due to the nonrandom nature in which they were selected. This is particularly problematic when individuals self-select to participate in a study (Da Costa & Schneider, 2016).

As previously mentioned, the external validity of a study refers to the ability of its results to be generalized to other settings or populations (Da Costa & Schneider, 2016). Threats to external validity relevant to this study include reactivity and selection effects. Both factors are also threats to internal validity, as they can also influence the credibility of the results (Da Costa & Schneider, 2016). When the sampling strategy does not result in a representative sample of participants, as can be the case when convenience sampling is used, a researcher must consider how this might influence the generalizability of the results. Therefore, when reporting the results of the study, I noted that these results cannot be generalized to the broader caregiver population. Instead, I drew conclusions about the effect of social support on the relationship between caregiver burden and anxiety/depression among family caregivers of stroke patients.

Reactivity threats to validity stem from reactive effects of being studied and reactive effects of testing, both of which also impact internal validity (Da Costa & Schneider, 2016). The Hawthorne effect, which refers to participants' tendencies to change their behavior because they know they are being studied, is a common challenge, especially in studies that occur over long periods of time, and in which multiple tests are administered. In the present study, I minimized threats to validity emanating from the Hawthorne effect by conducting the study over a short amount of time and only administering the survey one time. Furthermore, the results were not dependent on the observation of participants' behavior but rather on their honest responses to survey questions.

Ethical Procedures

All data collection and data storage occurred following the APA guidelines. I protected participants' identities and disclosed all relevant details about the study in the informed consent form for individuals to make an appropriate decision based on their circumstances. Before agreeing to participate in the proposed study, prospective participants were required to agree to the terms of the informed consent form by selecting "I agree" electronically at the bottom of the form. The informed consent form included the purpose of the study, assurances that the data would be collected and retained anonymously, and that participation is voluntary. A participant may discontinue participation at any time without consequence. On both the consent form and debriefing form, participants were given the link and phone number to Mental Health America, which they could contact if they experience any adverse effects from completing the survey. The results were anonymous, and no personal identifying information was collected. Participants were informed that all data would be kept in a password-protected computer and deleted 5 years after the completion of this study.

Summary

The purpose of this quantitative correlational study was to determine the extent to which social support and caregiver burden predict anxiety and depression among family caregivers of stroke patients. The study used a nonexperimental correlational design. The sample included caregivers who are a family caregiver of a stroke patient, at least 18 years old, have at least 6 months of experience as a family caregiver, and reside in the United States. The survey was administered through SurveyMonkey. Multiple regression analyses was conducted using SPSS Version 28 to examine the relationships among the variables. Chapter 4 presents the results of the data analysis.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to determine the extent to which social support (emotional, instrumental) and caregiver burden predict anxiety and depression among family caregivers of stroke patients. The research questions for this study were as follows:

RQ1: What are the combined (R^2) and relative (sr^2) effects of social support (emotional, instrumental) and caregiver burden in explaining the variance in anxiety among family caregivers of stroke patients?

H_{01}: Social support and caregiver burden do not predict anxiety.

H_1: Social support and caregiver burden do predict anxiety.

RQ2: What are the combined (R^2) and relative (sr^2) effects of social support (emotional, instrumental) and caregiver burden in explaining the variance in depression among family caregivers of stroke patients?

H_{01}: Social support and caregiver burden do not predict depression.

H_1: Social support and caregiver burden do predict depression.

In this chapter, the method for data collection and screening procedures are discussed, followed by descriptive statistics and the evaluation of statistical assumptions. The results from hierarchical multiple regression analyses are then presented, along with a summary.

Data Collection

Data were collected over a period of 3 weeks (October 1–21, 2023). Study participants were recruited from the SurveyMonkey participant panel based on the study's inclusion criteria requiring participants to be a family caregiver of a stroke patient, at least 18 years old, must have at least 6 months of experience as a family caregiver of a stroke patient, and must reside in the United States. Participants living outside of the United States were excluded. The survey took place in an online format and began with the consent form that explained the purpose of the study. The consent form also included a description of procedures, the voluntary nature of the study, risks and benefits, privacy, and contact information. The survey was anonymous; no identifying information was collected to protect participant privacy. Participants who did not provide consent were directed to the end of the survey. Participants who did provide consent were directed to the screening questions designed with a skip-logic feature to disqualify participants who did not meet the inclusion/exclusion criteria. Those who did not meet the inclusion/exclusion criteria were directed to a thank you page ending the survey.

Participants who met all criteria were directed to the survey portion of the study. All survey questions were equipped with a forced validation feature that requires them to answer all survey questions to prevent missing data. The forced validation procedure obviated the need to remove responses to missing or incomplete data. After all survey questions were answered, participants were directed to a debriefing page that explained the purpose of the study. Debriefing informed participants of the true nature of the study.

Participants were given the option to withdraw their data without penalty after the true nature of the study was disclosed. Prolific did not reveal how many participants met the inclusion/exclusion criteria or chose to withdraw their data after being debriefed, so it is not possible to calculate response rates.

The range for time to complete the survey was from 5 to 8 minutes. It appeared that the majority of the participants understood the instructions, but I received email from four participants who had questions about survey items. The original data collection plan included assessing emotional and instrumental support as well as formal and informal support. However, the items used to measure informal and informal support were inadvertently omitted from the survey in Survey Monkey.

Demographics

Demographics data were collected on age group and years of experience as a caregiver (see Table 1). Participant ages ranged from 18 to 80. There were five participants in the age group of 20–29, 58 participants in the age group 30–39, 35 participants in the age group 40–49, six participants in the age group 50–59, three participants in the age group 60–69, and three participants in the age group 70 and older.

Table 1

Frequencies: Age and Years of Experience

Variable	*N*	%
Age Group		
20-29	5	4.5%
30-39	59	53.2%
40-49	35	31.5%
50-59	6	5.4%
60-69	3	2.7%
70-80	3	2.7%
Years of Experience		
1	11	13.75%
2	41	51.25%
3	22	27.5%
4	6	7.5%

Results

Descriptive Statistics

The sample included 111 participants. The following means and standard deviations were calculated for the five variables: caregiver burden (*M* = 14.91, *SD* = 6.56); state anxiety (*M* = 22.03, *SD* = 7.03); depression (*M* = 6.23, *SD* = 3.93); emotional support (*M* = 4.03, SD = 1.46); and instrumental support (*M* = 3.76, *SD* = 1.60). Table 2 shows the descriptive statistics for the predictor and outcome variables.

Table 2

Descriptive Statistics for Predictor and Outcome Variables

Variable	*N*	*M*	*SD*	Min	Max
Caregiver Burden	111	14.91	6.56	0	26
State Anxiety	111	22.03	7.03	10	40
Depression	111	6.23	3.93	0	14
Emotional Support	111	4.03	1.46	0	6
Instrumental Support	111	3.76	1.60	0	6

Evaluation of Statistical Assumptions

Assumptions for multiple regression were tested prior to running the regression analyses in SPSS (i.e., normality, linearity, homoscedasticity, multicollinearity, and independence of residuals). Shapiro-Wilk test and Q-Q plots were used to test normality. Table 3 shows the results of the Shapiro-Wilk test and reveals none of the variables were normally distributed. Q-Q plots showed all data points were close to or on the line (see Appendix E). Therefore, the assumption of normality was partially met.

Table 3

Shapiro-Wilk Normality Testing for Study Variables

Variable	Statistic	*df*	*p*	Skewness	Kurtosis
Caregiver Burden	.956	111	.001	-.427	-.323
State Anxiety	.974	111	.027	.168	-.727
Depression	.927	111	<.001	-.023	-.942
Emotional Support	.916	111	<.001	-.329	-.335
Instrumental Support	.926	111	<.001	-.209	-.909

Linear relationships between each predictor variable and outcome variable were found by visual inspection of the scatterplots (see Appendix F). Thus, the assumption linearity was met. Multicollinearity was checked using the variance inflation factor (VIF values). Table 4 shows the VIF for the predictor variables. Since the VIF values were less than 10, and the tolerance scores were above 0.2, the predictor variables were not redundant with other independent variables and the assumption of multicollinearity was met.

Table 4

Collinearity Diagnostics for Predictor Variables

Variable	Tolerance	VIF
Emotional Support	.566	1.768
Instrumental Support	.555	1.801
Caregiver Burden	.856	1.169

The Durbin-Watson (*d)* test was conducted to determine the independence of residuals. Table 5 displays the Durban-Watson test results for the two regressions, using the four predictor variables (caregiver burden, anxiety, emotional support, and instrumental support). The Durbin-Watson values were close at 2.0. This indicated that there was independence of residuals, and the assumption of independence was met.

Table 5

Model Summary: Durbin-Watson Test

Outcome Variable	*Durbin-Watson*
Emotional Support	1.964
Instrumental Support	1.964
Caregiver Burden	1.964
Anxiety	1.997

I also examined homoscedasticity using scatterplots of standardized residuals and unstandardized predicted values to ensure the variance of errors was constant and there was no clear pattern in the distribution. The assumption for homoscedasticity was met, as assessed by visual inspection of a plot of standardized residuals and unstandardized predicted values. The variance of residuals was constant for all regressions. The distribution of residuals was examined for both regressions using P-P plots observed that all residuals were normally distributed for all regressions and the assumption of normally distributed residuals was met (see Appendix G). Cronbach’s alpha was also computed to test the reliability of the instruments used for the sample. Table 6 provides the Cronbach's alpha coefficients (α) for each measure, and each demonstrated acceptable internal consistency, ranging from .658 to .874.

Table 6

Cronach's Alpha Coefficients for Study Instruments

Instrument	*α*
Modified Caregiver Strain Index	.874
Strait-Trait Anxiety Inventory	.838
AGES Caregiver Survey	.868
Geriatric Depression Scale	.832
MacArthur Battery	.658

Hierarchical Regression Analysis

Two separate hierarchical multiple regressions were conducted. The first hierarchical multiple regression determined the relative strength of years of experience, emotional and instrumental support, and caregiver burden in predicting state anxiety. The second hierarchical multiple regression determined the relative strength of years of experience, emotional and instrumental support, and caregiver burden in predicting depression. In hierarchical multiple regression, independent variables are entered into the regression equation in a series of steps, using theoretical reasoning to determine the order of entry. There was a 3-stage multiple regression model conducted for each of the two regressions. The variables were entered in a specific order based on theoretical framework and relevant literature. Years of experience served as a covariate and were entered first in the equation. Emotional and instrumental support were entered in step 2 in the equation. Caregiver burden was entered in step 3 in the equation.

The first hierarchical regression examined the relationship between the predictor variables and state anxiety. The results revealed in Model 1 that years of experience did not significantly contribute to the regression model, $F(1,109) = 0.04$, $p = .842$. The results revealed in Model 2 that emotional support and instrumental support significantly contributed to the regression model, $F(3,107) = 10.21$, $p < .001$, and accounted for 22.3% of the variance in state anxiety. The results revealed in Model 3 that caregiver burden significantly contributed to the regression model, $F(4,106) = 14.01$, $p < .001$, and explained an additional 12.3% of the variance in state anxiety. The effect sizes for the models (R^2) were .223 and .123, indicating small to medium effects. Tables 7 and 8 present the regression model summary**.**

Table 7

Model Summary for Regression Analysis Predicting State Anxiety

Model	*R*	*R* Square	Adjusted *R* Square	SE
1	.019a	.000	-.009	7.061
2	.472b	.223	.201	6.285
3	.588c	.346	.321	5.792

Table 8

ANOVA Results for Three-Stage Regression Model: State Anxiety

	Model	*SS*	*df*	*MS*	*F*	*p*
1	Regression	1.982	1	1.982	.040	.842
	Residual	5434.937	109	49.862		
	Total	5436.919	110			
2	Regression	1210.833	3	403.611	10.219	<.001
	Residual	4226.086	107	39.496		
	Total	5436.919	110			
3	Regression	1881.114	4	470.278	14.019	<.001
	Residual	3555.805	106	33.545		
	Total	5436.919	110			

Research question 1 (RQ1) asked, “what are the combined (R^2) and relative (sr^2) effects of social support (emotional, instrumental) and caregiver burden in explaining the variance in state anxiety among family caregivers of stroke patients?” Table 9 presents the regression coefficients for each predictor variable. The hierarchical aggression revealed in stage 1 that years of experience was not a significant predictor of state anxiety, β = .128 (t = 1.594, p = .114). At stage 2, emotional support significantly predicted state anxiety, β = -.353 (t = -3.383, p < .001), which showed that higher levels of emotional support were associated with lower levels of state anxiety. Stage 2 also revealed that instrumental support was not a significantly predictor of state anxiety, β = -.005 (t = -.052, p = .959). The final stage revealed that caregiver burden was a significant predictor of state anxiety, β = .380 (t = 4.470, p < .001), which showed that higher levels of caregiver burden was associated with higher levels of state anxiety. Therefore, the null hypothesis was rejected for research question 1**.**

Table 9

Regression Coefficients Predicting State Anxiety

Model		*B*	*SE*	β	*t*	*p*
1	(Constant)	21.663	1.946		11.131	<.001
	Years of experience	.154	.771	.019	.199	.842
2	(Constant)	29.527	2.248		13.136	<.001
	Years of experience	.862	.698	.107	1.235	.220
	Emotional Support	-1.932	.540	-.403	-3.580	<.001
	Instrumental Support	-.469	.488	-.107	-.961	.339
3	(Constant)	20.436	2.903		7.039	<.001
	Years of experience	1.028	.645	.128	1.594	.114
	Emotional Support	-1.693	.500	-.353	-3.383	.001
	Instrumental Support	-.024	.461	-.005	-.052	.959
	Caregiver Burden	.407	.091	.380	4.470	<.001

The second hierarchical regression examined the relationship between the predictor variables and depression. The results revealed in Model 1 that years of experience did not significantly contribute to the regression model, *F*(1,109) = 0.627, $p =$ .43. The results revealed in Model 2 that emotional support and instrumental support significantly contributed to the regression model, *F*(3,107) = 15.77, $p < .001$, and accounted for 28.7% of the variance in depression. The results revealed in Model 3 that caregiver burden significantly contributed to the regression model, *F*(4,106) = 25.94, $p <$ .001, and explained an additional 18.9% of the variance in depression. The effect sizes for the models (R^2) were .228 and .189, indicating small to medium effects. Tables 10 and 11 presents the regression model summary.

Table 10

Model Summary for Regression Analysis

Model	*R*	*R* Square	Adjusted *R* Square	SE
1	.076	.006	-.003	3.945
2	.554	.307	.287	3.325
3	.703	.495	.476	2.852

Table 11

ANOVA Results for Three-Stage Regression Model: Depression

	Model	*SS*	*df*	*MS*	*F*	*p*
1	Regression	9.757	1	9.757	.627	.430
	Residual	1696.153	109	15.561		
	Total	1705.910	110			
2	Regression	523.209	3	174.403	15.778	<.001
	Residual	1182.701	107	11.053		
	Total	1705.910	110			
3	Regression	843.992	4	210.998	25.949	<.001
	Residual	861.918	106	8.131		
	Total	1705.910	110			

Research question 2 (RQ2) asked, "what are the combined (R^2) and relative (sr^2) effects of social support (emotional, instrumental) and caregiver burden in explaining the variance in depression among family caregivers of stroke patients?" Table 11 presents the regression coefficients for each predictor variable. The hierarchical regression revealed in stage 1 that years of experience was not a significant predictor of depression, β = .052 (*t* = .734, *p* = .465). At stage 2, emotional support significantly predicted depression, β = -.384 (*t* = -4.185, *p* < .001), which showed that higher levels of emotional support were associated with lower levels of depression. Stage 2 also revealed that instrumental support was not a significantly predictor of depression, β = -.028 (*t* = -.306, *p* = .760). The final stage shows that caregiver burden was a significantly predictor of depression, β = .469 (*t* = 6.281, *p* <.001), which showed that higher levels of caregiver burden was associated with higher levels of depression. Therefore, the null hypothesis was rejected for research question 2**.**

Table 12

Coefficients from Regression Analysis: Predicting Depression

Model		*B*	*SE*	β	*t*	*p*
1	(Constant)	7.042	1.087		6.478	<.001
	Years of experience	-.341	.431	-.076	-.792	.430
2	(Constant)	12.190	1.189		10.251	<.001
	Years of experience	.118	.369	.026	.320	.750
	Emotional Support	-1.196	.286	-.446	-4.190	<.001
	Instrumental Support	-.377	.258	-.154	-1.461	.147
3	(Constant)	5.901	1.429		4.129	<.001
	Years of experience	.233	.317	.052	.734	.465
	Emotional Support	-1.031	.246	-.384	-4.185	<.001
	Instrumental Support	-.069	.227	-.028	-.306	.760
	Caregiver Burden	.281	.045	.469	6.281	<.001

Summary

Two hierarchical multiple regressions were used to determine if years of experience, emotional support, instrumental support, and caregiver burden were predictors of state anxiety and depression among family caregivers of stroke patients. The results revealed that in each model predicting state anxiety and depression, emotional support and caregiver burden were significant predictors. Years of experience (covariate) was not a significant predictor in either of the models. For the first regression analysis, higher levels of emotional support were associated with lower levels of state anxiety. In addition, higher levels of caregiver burden were associated with higher levels of state anxiety. For the second regression analysis, higher levels of emotional support were associated with lower levels of depression. In addition, higher levels of caregiver burden were associated with higher levels of depression.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative study was to determine the extent to which years of experience caregiving, social support (emotional, instrumental), and caregiver burden predict anxiety and depression among family caregivers of stroke patients. There are several studies dedicated to understanding the burden faced by informal caregivers and its connection with mental health symptoms such as anxiety, depression, and stress (Del-Pino-Casado et al., 2021; Hall et al., 2019; Zhao et al., 2021). According to Hall et al. (2019), the emotional well-being of caregivers often varies, largely due to the responsibilities they bear in caring for stroke patients. Zhao et al. (2021) explains that these responsibilities, often shouldered by family caregivers, can lead to increased levels of anxiety, depression, and stress, impacting their emotional well-being. Evidence also suggests that caregiver burden is a pervasive issue affecting a majority of informal caregivers (Del-Pino-Casado et al., 2021). Due to the nature of caregiving, informal caregivers are found to be more prone to mental health symptoms and emotional disorders (Marima et al., 2019). Despite the focus of literature to understand the burden faced by informal caregivers and its connection with mental health, there is a gap concerning the relationship between types of social support (emotional, instrumental), caregiver burden, and anxiety/depression among family caregivers of stroke patients.

The goal of this quantitative nonexperimental cross-sectional survey research design was to address the gap in the literature related to the potential for years of caregiving experience, emotional and instrumental support, and caregiver burden to predict anxiety and depression among family caregivers of stroke patients. Results from the hierarchical multiple regressions showed that emotional support and caregiver burden were significant predictors of anxiety and depression. More specifically, higher levels of emotional support were associated with lower levels of anxiety and depression, whereas higher levels of caregiver burden were associated with higher levels of anxiety and depression. Years of experience and instrumental support were not significant predictors of anxiety and depression. These findings suggest that emotional support and caregiver burden play significant roles in predicting anxiety and depression among family caregivers of stroke patients.

Interpretation of the Findings

Emotional and Instrumental Support

In the context of this study, emotional support refers to psychological support for family caregivers of stroke patients from either a professional or a family member, while instrumental support refers to support with daily tasks from either a professional or a family member, for family caregivers of stroke patients. Emotional support was a significant predictor of both anxiety and depression among family caregivers of stroke patients. Higher levels of emotional support were associated with lower levels of anxiety and depression symptoms. This finding is important because it was also established that emotional support is a significant predictor of anxiety among family caregivers of stroke patients, while instrumental support is not. The findings align with those of Li et al. (2017) who conducted a cross-sectional single-center questionnaire survey study to examine the needs and rights awareness of stroke survivors and caregivers. The researchers established that caregivers of stroke patients exhibited a strong desire to return to their pre-stroke range of activities and roles and were more likely to seek mental and emotional help from their family rather than professionals (Li et al., 2017).

The finding that emotional support was a significant predictor of anxiety and depression aligns with the qualitative outcomes reported by Gertrude et al. (2019) regarding the needs of Ugandan stroke victims and their caregivers. In this study, family caregivers of stroke patients showed a strong inclination to seek mental and emotional support from family caregivers rather than professionals. This preference for emotional support from within their familial network underscores the importance of emotional support in alleviating mental health symptoms.

Gertrude et al. (2019) also identified four key themes related to caregiver burden: new responsibilities, coping mechanisms, caregiver stress, limited resources, and experiences with overall patient outcomes. These themes shed light on the multifaceted challenges faced by caregivers of stroke patients. For instance, the emergence of new responsibilities, coupled with limited resources, can significantly contribute to caregiver burden. More importantly, the presence of effective coping mechanisms and emotional support systems within the caregiver's network appeared to mitigate this burden. Therefore, the alignment between the findings from this research and the themes identified by Gertrude et al. (2019) underscore the crucial role of emotional support in mitigating caregiver burden and, consequently, reducing the likelihood of anxiety and depression among caregivers of stroke patients.

In a similar study to Gertrude et al. (2019), Marima et al. (2019) examined the buffering effects that social-emotional support can have for family caregivers with patients with mental disorders in Zimbabwe. According to Marima et al. (2019), family caregivers who received help with daily living exercises or social interactions resulted in prevention of minor mental ailments such as feelings of loneliness. Family caregivers received the most beneficial help from other family members**.**

Caregiver Burden

Caregiver burden is marked by a complex nature of burden, encompassing physical, social, mental, and financial aspects (Muhrodji et al., 2021). The current study found that higher levels of caregiver burden resulted in higher levels of both anxiety and depression symptoms among family caregivers of stroke patients. Caregivers are required to adjust to dual responsibilities of caring for a dependent stroke survivor and making changes in their own life, which can lead to increased anxiety, depression, and stress (Gbiri et al., 2015; Gertrude et al., 2019; Hall et al., 2019; Marima et al., 2019; Zhao et al., 2021). Marima et al. (2019) found that 45.1% of caregivers were at risk for developing mental health issues like depression and anxiety. Similarly, Zhao et al. (2021) found that 36% of family caregivers had anxiety, while 23% had depression. These studies highlight the emotional weight of caregiving and its significant impact on caregivers' mental health. Panzeri et al. (2019), on the other hand, conducted a systematic review of the literature to determine the efficacy of interventions on the psychological health of stroke caregivers. Panzeri et al. found that psychological and therapeutic techniques were more useful and efficacious in reducing the psychological burden of caregivers.

Professional caregivers, including nurses, physicians, therapists, counselors, and psychiatrists, also experience distress, psychological hardships, and caregiver burden like their informal counterparts (Joshi et al., 2020). Lobo et al. (2021) demonstrated that professional caregiver engagement with stroke patients resulted in different levels of care, underscoring an overall need to implement public health policies that would promote greater caregiver engagement. This finding is also supported by the findings of Kind et al. (2018) who examined the risks faced by professional caregivers such as client aggression, physical or verbal abuse, and problematic behavior that could contribute to the deterioration of caregiver health. Kind et al. noted that the level of caregiver burden did not depend on the type of caregiver (professional or family caregiver), but rather the nature of the caregiving tasks performed and how satisfied or content patients and family members were with the quality of care. The stressors identified by Muhrodji et al. (2021), such as lack of knowledge, lack of concern from patient’s families, suboptimal service from medical administration, physical limitations, and imperfect administrative services, resonate with the broader concept of caregiver burden discussed by Gertrude et al. (2019).

In a related study, Akosile et al. (2018) examined informal caregiving burden and perceived social support in an acute stroke care facility and reported that family caregivers experienced a higher level of burden without proper communal support in terms of monetary, physical, and emotional elements. They found that the prevalence of caregiver burden among family caregivers was at 96.7%, with 17.9% of them perceiving low levels of social support. Family caregivers of stroke survivors can benefit from support from healthcare professionals, family, friends, and caregiving colleagues by reducing caregiver burden and/or mental health symptoms. Healthcare professionals can provide data, training, instrumental and examination support, peer data, and everyday reassurance, which can provide critical support to informal caregivers (Gertrude et al., 2019; Kazemi et al., 2021).

Theoretical Framework

The study's findings align with the theoretical framework of the caregiving stress process model by Pearlin et al. (1981). This model discusses the relationship between caregiver perceived-stress, depression, and their most often used coping mechanisms and explains informal caregiving processes that can affect caregiver health and the outcomes related to physical and mental health. In the current study, both emotional support and caregiver burden were found to be significant predictors of anxiety and depression among family caregivers of stroke patients. This aligns with the caregiving stress process model, which posits that primary stressors, originating from the needs of the patient, and secondary stressors, involving the financial, social, and personal situations of family caregivers, can lead to increased anxiety, depression, and stress. The study findings also suggest that emotional support and caregiver burden play significant roles in predicting anxiety and depression among family caregivers of stroke patients, which is consistent with the caregiving stress process model's focus on the impact of caregiving stressors on the caregivers' experiences and feelings of caregiving.

The alignment between the study’s findings and Pearlin et al.’s (1981) caregiving stress process model is evident through the investigation of caregiver burden and perceived stress, depression, and coping mechanisms highlighted in the theoretical framework. Specifically, the current study assessed the impact of emotional support, instrumental support, and caregiver burden on anxiety and depression among family caregivers of stroke patients, corresponding to the caregiving stress process model’s emphasis on primary and secondary stressors. The secondary stressors measured in this study encompassed components of caregiver burden such as financial, social, and personal aspects affecting family caregivers, reflecting the model’s recognition of diverse stress sources beyond the direct needs of the patient. This comprehensive examination underscores the model’s relevance in understanding the multifaceted nature of caregiving stress and its implications for caregiver well-being, in line with the observed predictors (emotional support and caregiver burden) of anxiety and depression among family caregivers of stroke patients.

Limitations of the Study

While the current study aimed to address a gap in the literature related to social support (emotional and instrumental) and caregiver burden as predictors of anxiety and depression among family caregivers of stroke patients, there were several limitations. First, the study intended to include measures of the amount of formal and informal support family caregivers received. However, the items on that instrument were inadvertently omitted from the survey. It is possible that formal and informal support could have impacted the results. In addition, the study was limited to family caregivers of stroke patients and, therefore, the findings may not generalize to professional caregivers or family caregivers of patients with other conditions. The study also relied on a convenience sample of family caregivers who self-selected to participate in the survey-based research. Thus, the results may be different for those who do not choose to participate in research. That is, individuals who self-select may be motivated to favor one type of response option over another (Bowen et al., 2020), further limiting the generalizability of the results. Another limitation is that the findings were based on participants' self-report, which may be skewed based on a participant's willingness to report honestly. Although the survey was anonymous, participants may still have responded in a way that increases social desirability bias by intentionally presenting oneself in the best possible light (Grimm, 2010). Response bias can also occur when eligible participants do not respond to the survey request to withdraw from the study before its completion due to fatigue. It is unknown the extent to which response bias may have impacted the findings of this study. Although thoughts, attitudes, and intentions are the nearest antecedents to behavior, the current study did not assess actual behavior in a real-world situation.

Recommendations

While this study employed a non-experimental correlational research design, a longitudinal study design could be employed to track changes in various types (e.g., emotional, instrumental, formal, informal) and amount of support over time, alongside caregiver burden, and their collective impact on mental health outcomes such as anxiety and depression. This longitudinal approach would offer valuable insights into the evolving nature of support systems and caregiver experiences, shedding light on the longitudinal relationships between support, burden, and mental health outcomes among caregivers. Additionally, while the current study utilized quantitative self-reported measures, incorporating qualitative methodologies such as in-depth interviews in future research could provide nuanced insights into the lived experiences and perceptions of caregivers, thereby enhancing the depth of understanding of the interplay between support, burden, and mental health outcomes over time.

Implications

The findings of this study have implications for enhancing the well-being of family caregivers who provide care for stroke patients. Rooted in the caregiving stress process model by Pearlin, the study demonstrated that emotional support and caregiver burden were significant predictors of state anxiety and depression symptoms among caregivers. These results may be used to inform practice and policy for fostering positive social change in caregiving environments. One implication is the need for tailored interventions that prioritize emotional support. Given the significant role emotional support plays in predicting anxiety and depression symptoms as reported by the current study and previous research (Gertrude et al., 2019; Kazemi et al., 2021), healthcare professionals and policymakers should focus on developing programs that cultivate empathic communication skills, active listening, and strategies for expressing emotional needs effectively. Support groups, counseling services, and peer-to-peer networks may be vital components of creating environments where caregivers can share experiences, receive emotional validation, and build a sense of community.

Addressing caregiver burden emerged as another critical factor associated with higher levels of anxiety and depression among the family caregivers. This result aligns with other research showing that caregiver burden has a negative impact on mental health outcomes on caregivers (Gbiri et al., 2015; Gertrude et al., 2019; Hall et al., 2019). Thus, interventions should be designed to alleviate this burden through multifaceted approaches. Educational programs focusing on stress management, time management, and coping strategies tailored to the caregiving context empower caregivers to navigate challenges effectively. Initiatives such as respite care, community-based support systems, and caregiver-training programs contribute to reducing the overall burden and preventing its negative consequences. In terms of institutional support and awareness, institutions involved in healthcare, social services, and caregiving should prioritize awareness campaigns regarding the nature of caregiver work for patients with stroke. These efforts should be designed to educate both formal and informal caregivers about the potential challenges they might face. Institutions should provide readily available support in the form of informational resources, counseling services, and access to community programs, fostering a culture of support within caregiving environments.

Acknowledging the impact of emotional support on mental health outcomes, training programs should include a spectrum of support mechanisms. Caregivers need skills not only to express and receive emotional support but also to address practical aspects such as healthcare navigation, financial management, and logistical challenges (Erler et al., 2019). Collaborative efforts between healthcare professionals, community organizations, and policymakers are crucial. Interdisciplinary collaboration can enhance the coordination of care, ensuring that caregivers receive comprehensive support addressing both emotional and practical needs. Educational programs should extend beyond caregivers to include broader communities, fostering understanding and empathy toward the challenges faced by family caregivers (Caunca et al., 2020). Schools, workplaces, and community organizations play a role in raising awareness about the impact of caregiving stress and promoting a supportive environment for caregivers. These implications offer actionable steps for stakeholders in the healthcare and caregiving domains to enhance the well-being of family caregivers. By recognizing the multifaceted nature of caregiving stress and tailoring interventions accordingly, positive social change can be achieved. This ultimately improves the caregiving experience and outcomes for both family caregivers and stroke patients.

Conclusion

Family caregiving, particularly in the context of supporting stroke patients, is a complex and demanding role that significantly impacts the mental health of caregivers. This study, anchored in the caregiving stress process model, found that emotional support and caregiver burden influence state anxiety and depression symptoms among family caregivers. The implications drawn from this research underscore the critical need for targeted interventions to alleviate caregiver burden and enhance emotional and instrumental support. The multifaceted nature of caregiving stress and depression necessitates comprehensive educational and support programs. Initiatives should extend beyond conventional approaches, fostering awareness, community engagement, and collaboration across healthcare, social services, and policymaking domains. To promote positive social change, it is imperative that interventions are recurrent, tailored, and inclusive, addressing the evolving needs of family caregivers throughout their caregiving journey. This study serves as a catalyst for reshaping family caregiving support structures and advancing a holistic approach to enhance the well-being of family caregivers and, by extension, the quality of care provided to stroke patients.

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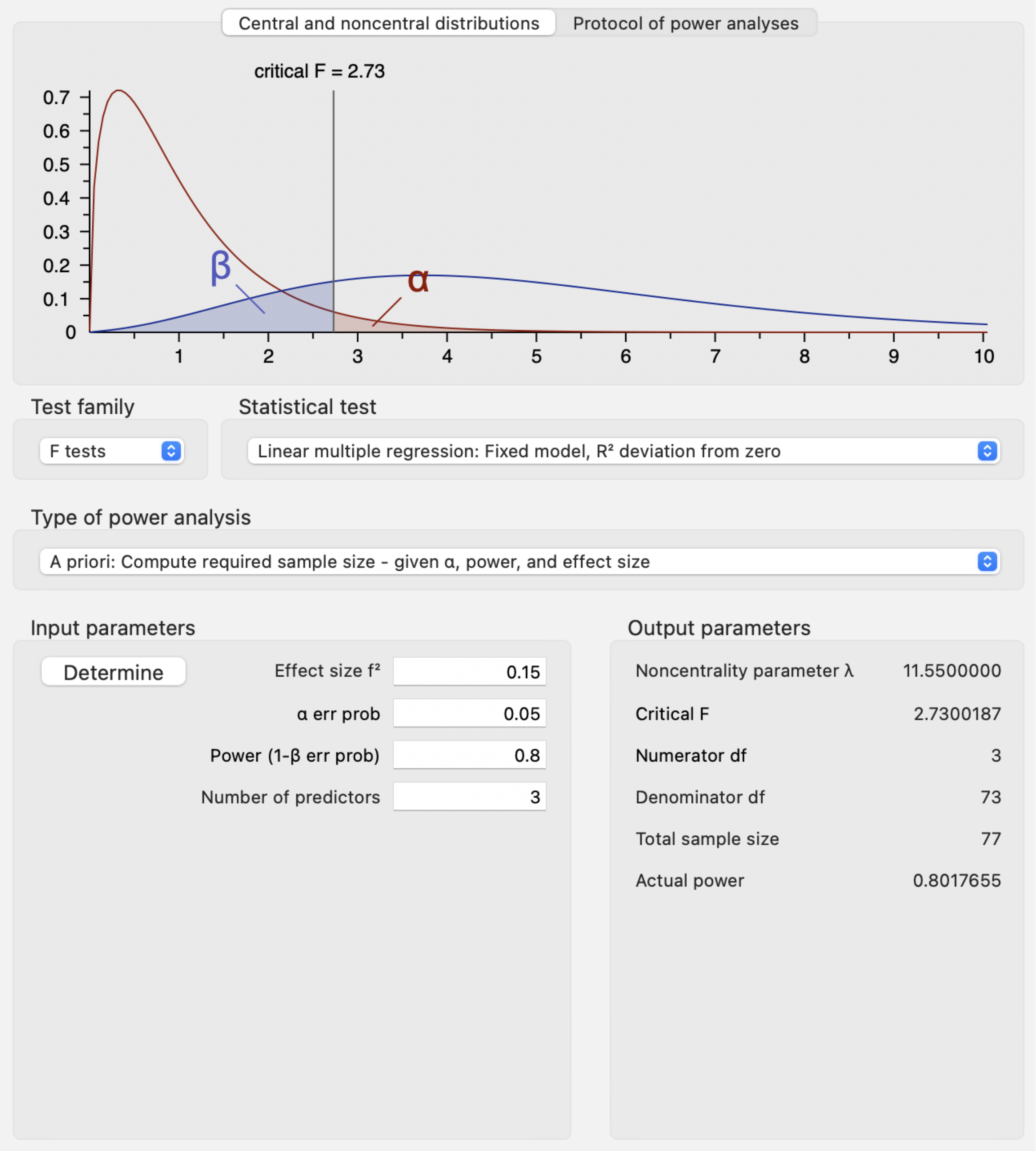
Appendix A: G*Power Analysis



Test family

F tests

Statistical test

Linear multiple regression: Fixed model, R² deviation from zero

Type of power analysis

A priori: Compute required sample size - given α, power, and effect size

Input parameters

Effect size f²	0.15
α err prob	0.05
Power (1-β err prob)	0.8
Number of predictors	3

Output parameters

Noncentrality parameter λ	11.5500000
Critical F	2.7300187
Numerator df	3
Denominator df	73
Total sample size	77
Actual power	0.8017655

Appendix B: Modified Caregiver Strain Index

Modified Caregiver Strain Index

Directions: Here is a list of things that other caregivers have found to be difficult. Please put a checkmark in the columns that apply to you. We have included some examples that are common caregiver experiences to help you think about each item. Your situation may be slightly different, but the item could still apply.

	Yes, On a Regular Basis=2	Yes, Sometimes =1	No=0
My sleep is disturbed (For example: the person I care for is in and out of bed or wanders around at night)	______	______	______
Caregiving is inconvenient (For example: helping takes so much time or it's a long drive over to help)	______	______	______
Caregiving is a physical strain (For example: lifting in or out of a chair; effort or concentration is required)	______	______	______
Caregiving is confining (For example: helping restricts free time or I cannot go visiting)	______	______	______
There have been family adjustments (For example: helping has disrupted my routine; there is no privacy)	______	______	______
There have been changes in personal plans (For example: I had to turn down a job; I could not go on vacation)	______	______	______
There have been other demands on my time (For example: other family members need me)	______	______	______
There have been emotional adjustments (For example: severe arguments about caregiving)	______	______	______
Some behavior is upsetting (For example: incontinence; the person cared for has trouble remembering things; or the person I care for accuses people of taking things)	______	______	______
It is upsetting to find the person I care for has changed so much from his/her former self (For example: he/she is a different person than he/she used to be)	______	______	______
There have been work adjustments (For example: I have to take time off for caregiving duties)	______	______	______
Caregiving is a financial strain	______	______	______
I feel completely overwhelmed (For example: I worry about the person I care for; I have concerns about how I will manage)	______	______	______

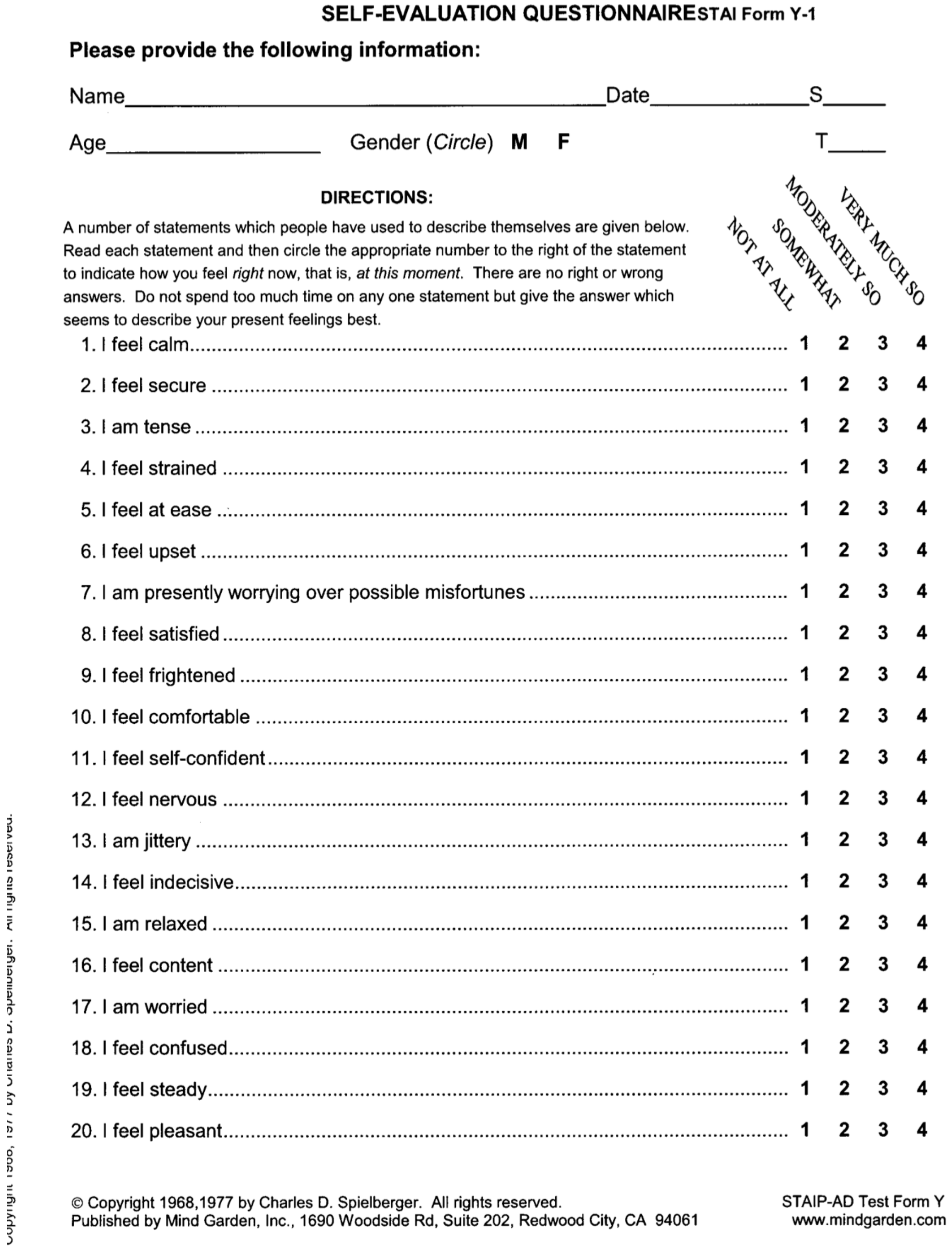
[Sum responses for "Yes, on a regular basis" (2 pts each) and "yes, sometimes" (1 pt each)]

Total Score =

Thornton, M., & Travis, S.S. (2003). Analysis of the reliability of the Modified Caregiver Strain Index. *The Journal of Gerontology, Series B, Psychological Sciences and Social Sciences*, *58*(2), p. S129. Copyright © The Gerontological Society of America. Reproduced by permission of the publisher.

The Hartford Institute would like to acknowledge the original author of this *Try This®* issue: M. Terry Sullivan.

Appendix C: Strait-Trait Anxiety Scale



SELF-EVALUATION QUESTIONNAIRE **STAI Form Y-1**

Please provide the following information:

Name____Date______________S_____

Age____________________ Gender (*Circle*) **M** **F** T_____

DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	**1**	**2**	**3**	**4**
2. I feel secure	**1**	**2**	**3**	**4**
3. I am tense	**1**	**2**	**3**	**4**
4. I feel strained	**1**	**2**	**3**	**4**
5. I feel at ease	**1**	**2**	**3**	**4**
6. I feel upset	**1**	**2**	**3**	**4**
7. I am presently worrying over possible misfortunes	**1**	**2**	**3**	**4**
8. I feel satisfied	**1**	**2**	**3**	**4**
9. I feel frightened	**1**	**2**	**3**	**4**
10. I feel comfortable	**1**	**2**	**3**	**4**
11. I feel self-confident	**1**	**2**	**3**	**4**
12. I feel nervous	**1**	**2**	**3**	**4**
13. I am jittery	**1**	**2**	**3**	**4**
14. I feel indecisive	**1**	**2**	**3**	**4**
15. I am relaxed	**1**	**2**	**3**	**4**
16. I feel content	**1**	**2**	**3**	**4**
17. I am worried	**1**	**2**	**3**	**4**
18. I feel confused	**1**	**2**	**3**	**4**
19. I feel steady	**1**	**2**	**3**	**4**
20. I feel pleasant	**1**	**2**	**3**	**4**

Published by Mind Garden, Inc., 1690 Woodside Rd, Suite 202, Redwood City, CA 94061

STAIP-AD Test Form Y
www.mindgarden.com

Appendix D: Geriatric Depression Scale

Geriatric Depression Scale: Short Form

Choose the best answer for how you have felt over the past week:

1. Are you basically satisfied with your life? YES / **NO**
2. Have you dropped many of your activities and interests? **YES** / NO
3. Do you feel that your life is empty? **YES** / NO
4. Do you often get bored? **YES** / NO
5. Are you in good spirits most of the time? YES / **NO**
6. Are you afraid that something bad is going to happen to you? **YES** / NO
7. Do you feel happy most of the time? YES / **NO**
8. Do you often feel helpless? **YES** / NO
9. Do you prefer to stay at home, rather than going out and doing new things? **YES** / NO
10. Do you feel you have more problems with memory than most? **YES** / NO
11. Do you think it is wonderful to be alive now? YES / **NO**
12. Do you feel pretty worthless the way you are now? **YES** / NO
13. Do you feel full of energy? YES / **NO**
14. Do you feel that your situation is hopeless? **YES** / NO
15. Do you think that most people are better off than you are? **YES** / NO

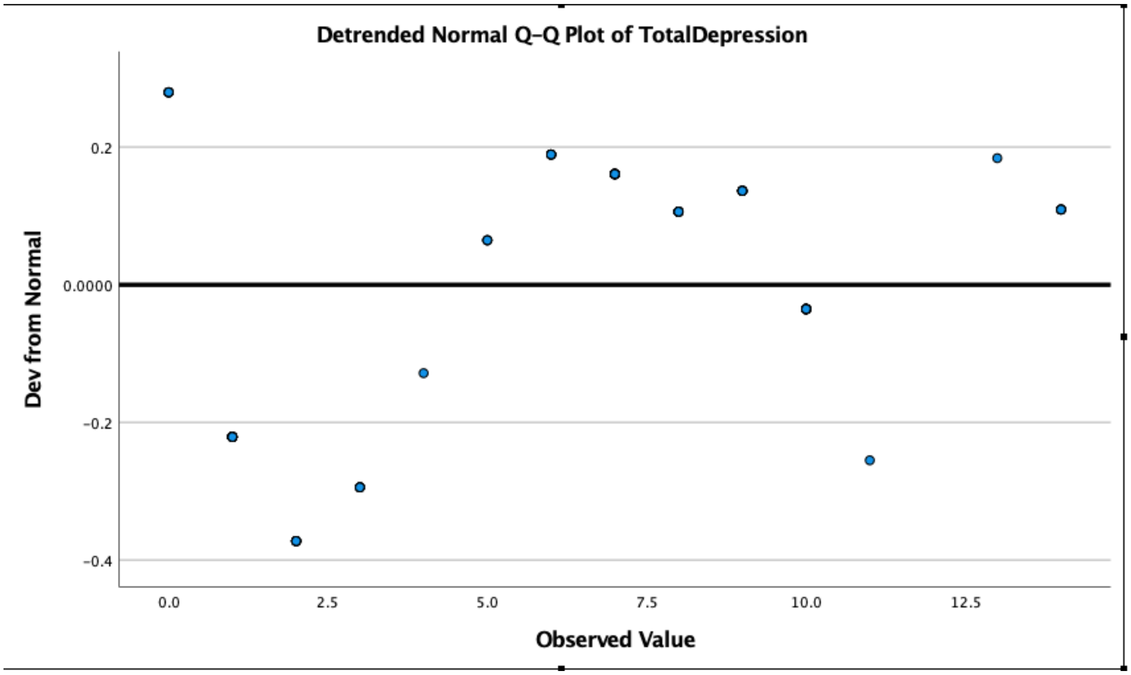
Answers in **bold** indicate depression. Score 1 point for each bolded answer.

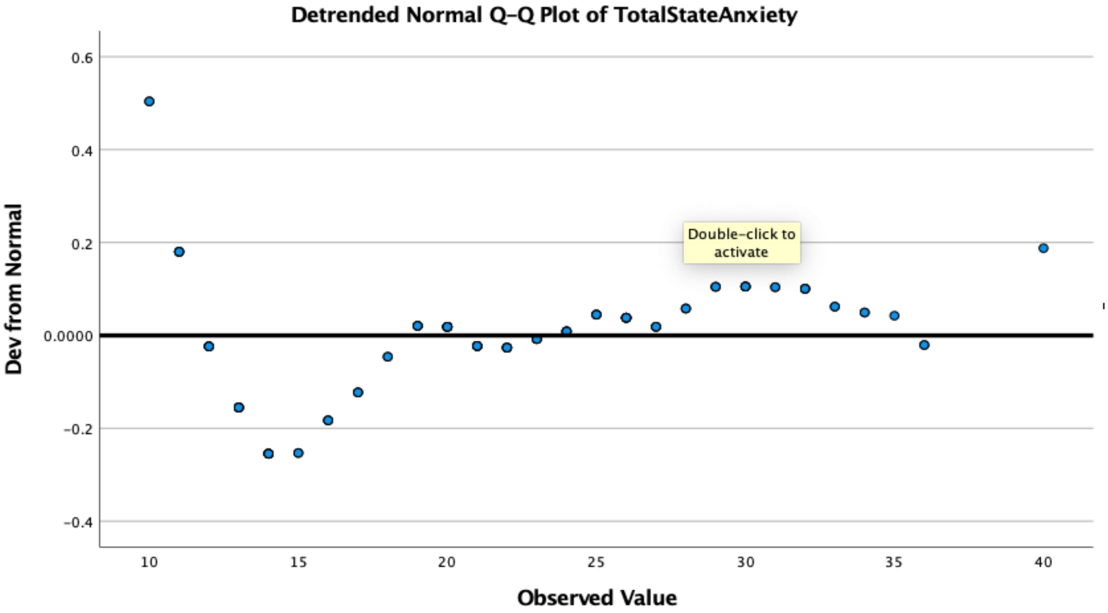
A score > 5 points is suggestive of depression.
A score ≥ 10 points is almost always indicative of depression.
A score > 5 points should warrant a follow-up comprehensive assessment.

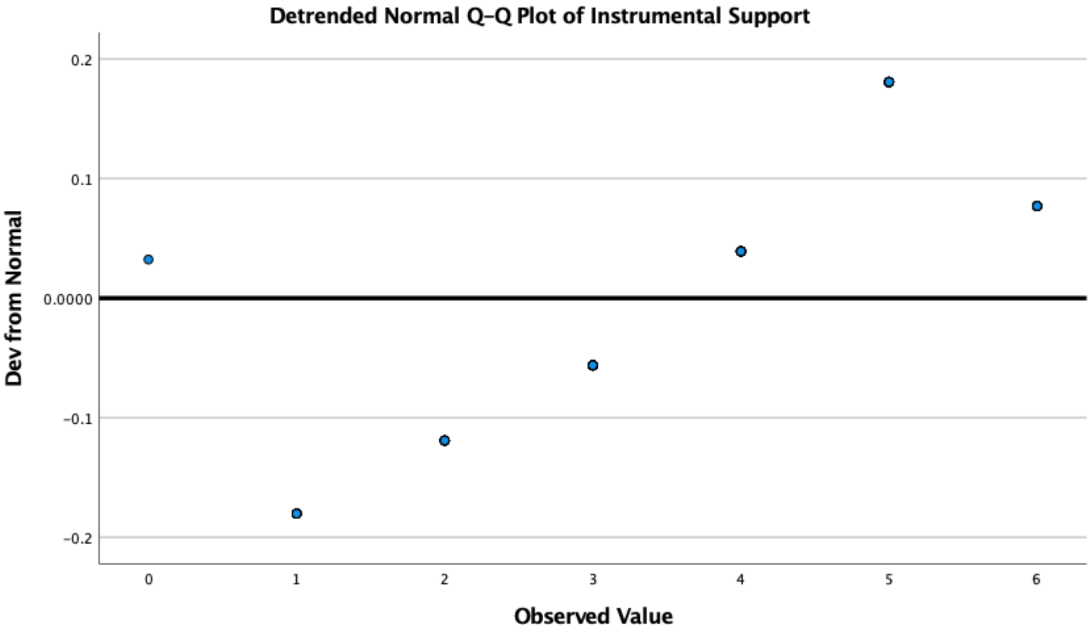
Source: http://www.stanford.edu/~yesavage/GDS.html
This scale is in the public domain.

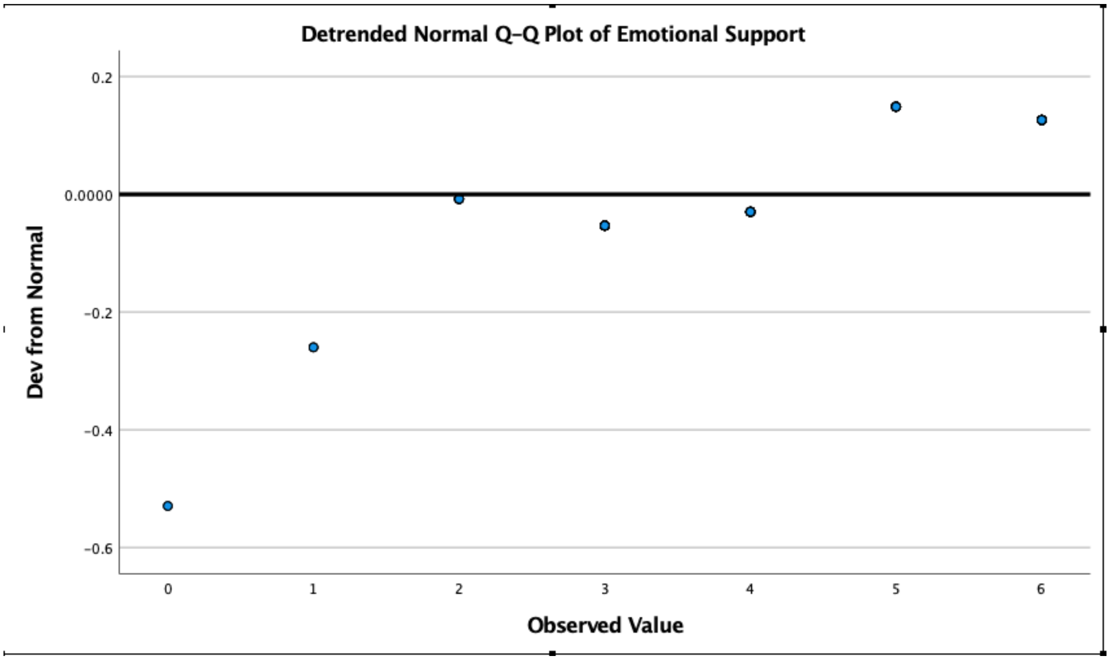
The Hartford Institute for Geriatric Nursing would like to acknowledge the original author of this Try This, Lenore Kurlowicz, PhD, RN, CS, FAAN, who made significant contributions to the field of geropsychiatric nursing and passed away in 2007.

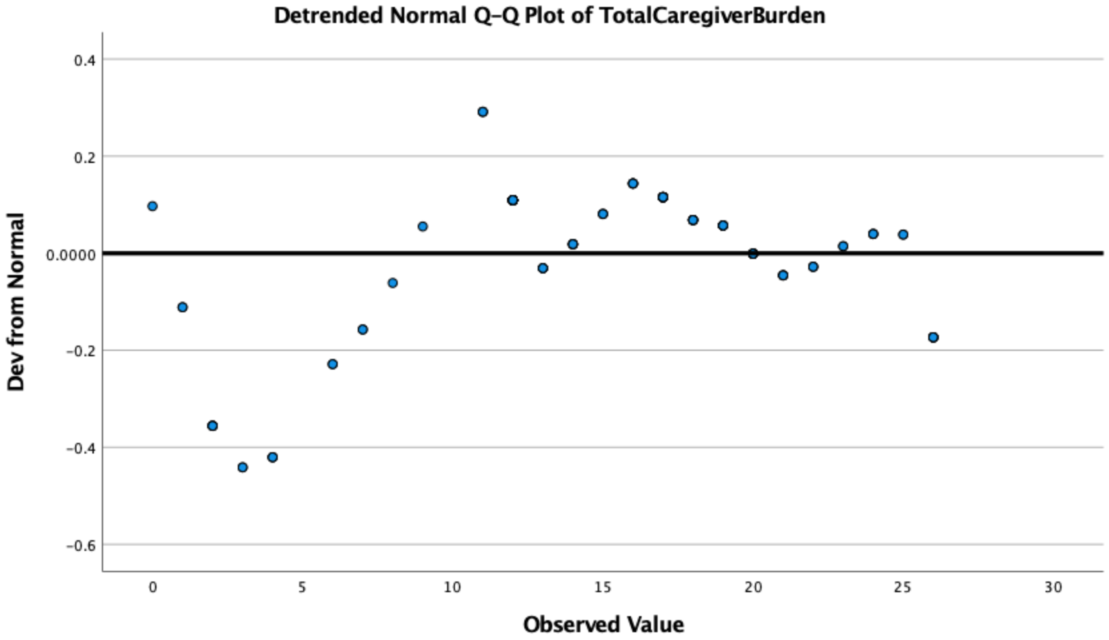
Appendix E: Q Q Plots

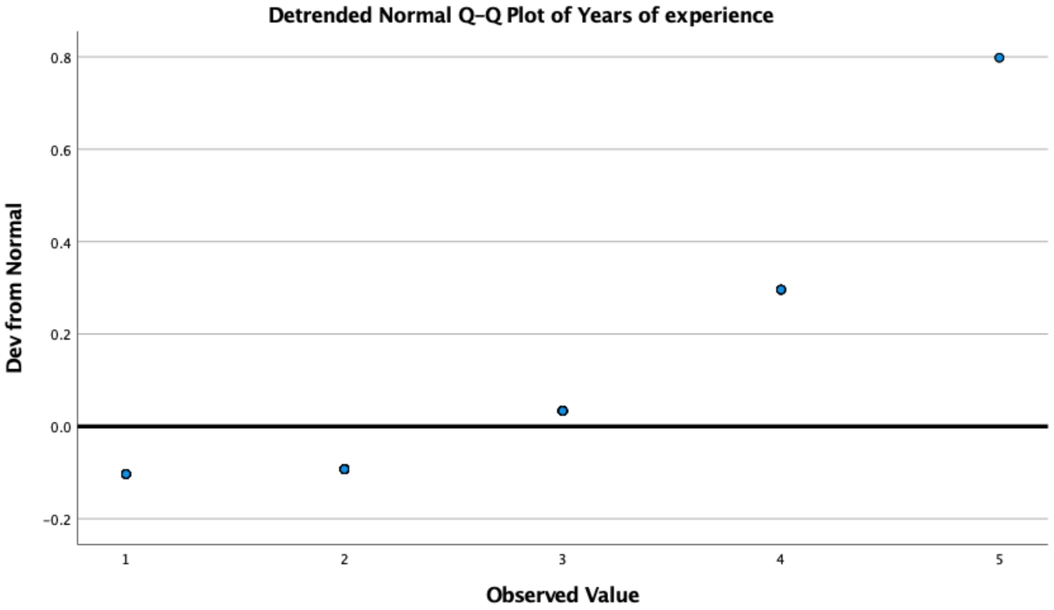


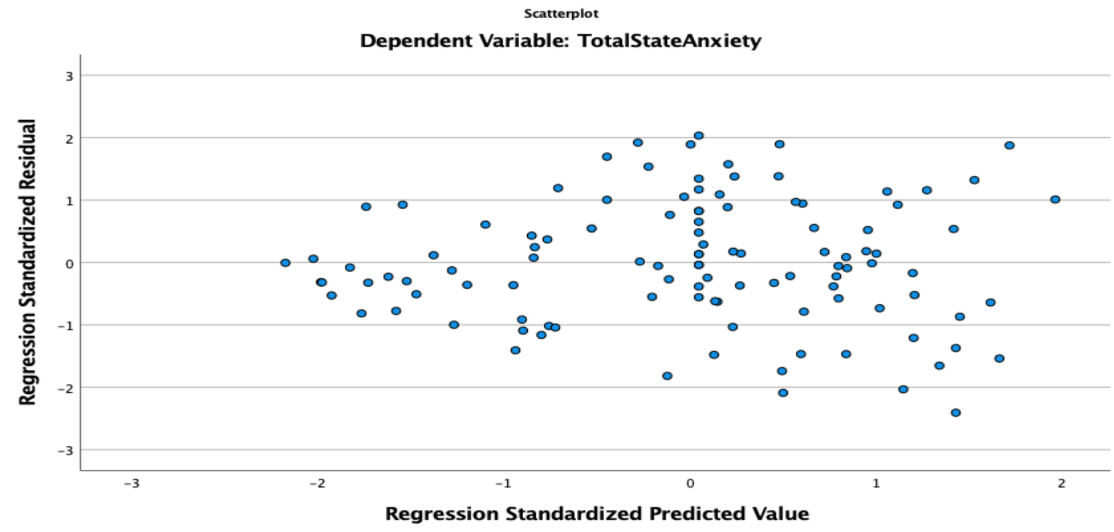


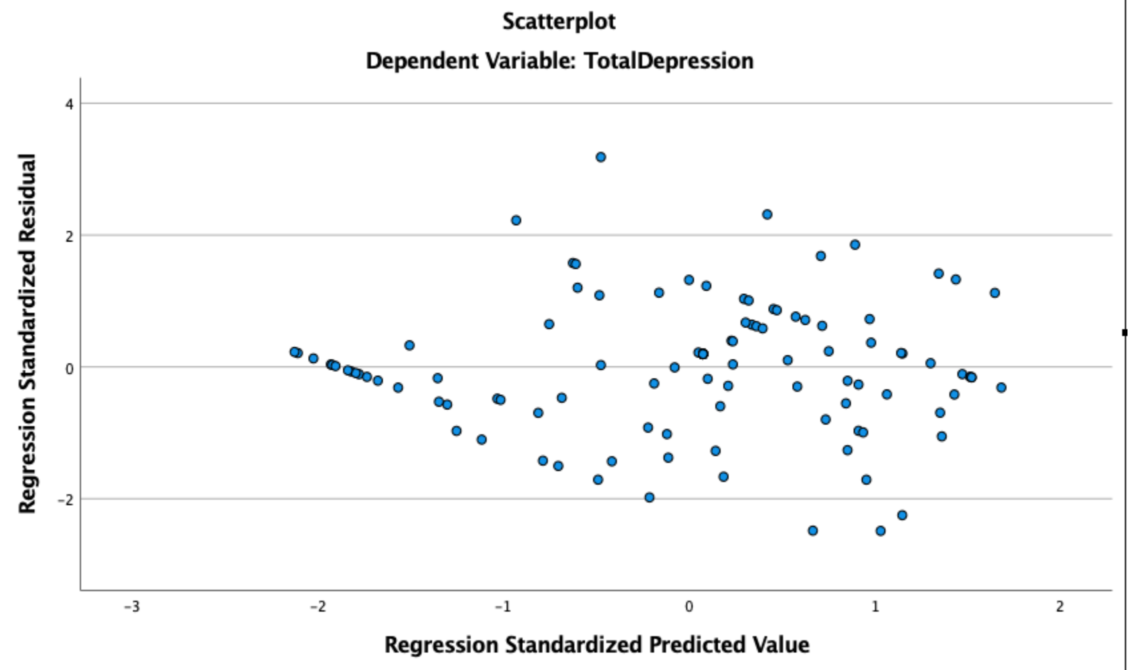

Detrended Normal Q-Q Plot of Instrumental Support
Dev from Normal
0.2
0.1
0.0000
-0.1
-0.2
0
1
2
3
4
5
6
Observed Value

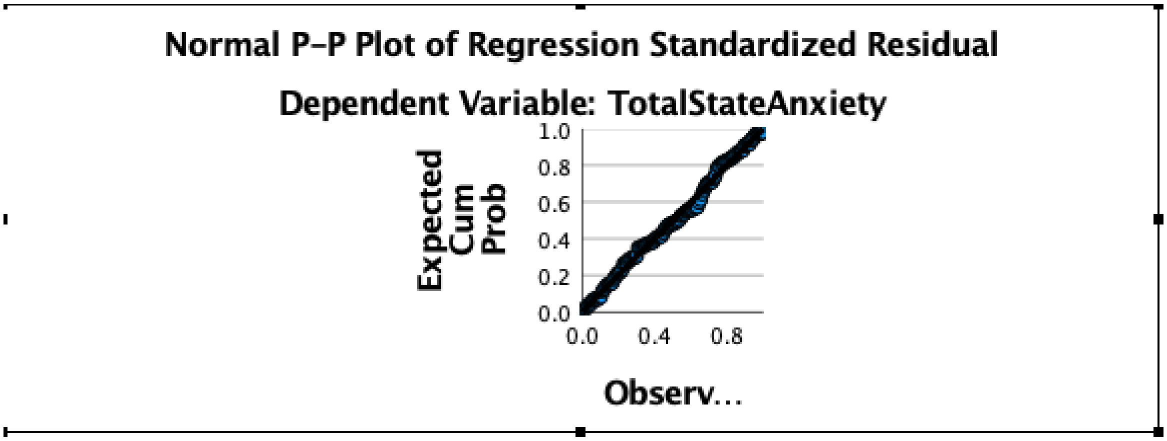

Detrended Normal Q-Q Plot of Emotional Support
Dev from Normal
0.2
0.0000
-0.2
-0.4
-0.6
0
1
2
3
4
5
6
Observed Value

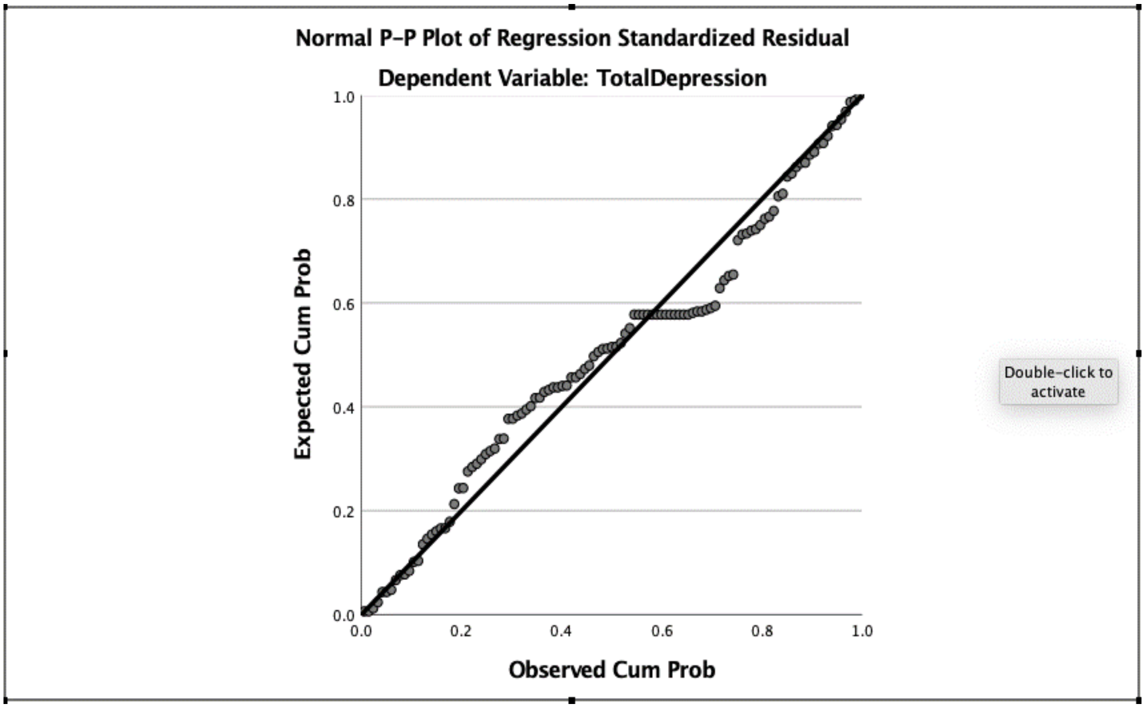

Detrended Normal Q-Q Plot of TotalCaregiverBurden
Dev from Normal
0.4
0.2
0.0000
-0.2
-0.4
-0.6
0
5
10
15
20
25
30
Observed Value


Detrended Normal Q-Q Plot of Years of experience
Dev from Normal
0.8
0.6
0.4
0.2
0.0
-0.2
1
2
3
4
5
Observed Value


Scatterplot
Dependent Variable: TotalStateAnxiety
Regression Standardized Residual
3
2
1
0
-1
-2
-3
-3
-2
-1
0
1
2
Regression Standardized Predicted Value


Scatterplot
Dependent Variable: TotalDepression
Regression Standardized Residual
4
2
0
-2
-3
-2
-1
0
1
2
Regression Standardized Predicted Value


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: TotalStateAnxiety
Expected Cum Prob
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.4
0.8
Observ…


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: TotalDepression
Expected Cum Prob
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Observed Cum Prob
Double-click to activate