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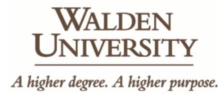

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Walden University

College of Social and Behavioral Sciences

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Lillian Delores Williams

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Walden University
2020

Abstract

Perception of Stress Observed by Family Members of Dentists Who Have Committed Suicide

by

Lillian Delores Williams

MS, Troy University, 2013

BA, Augusta State University, 2011

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Human and Social Services

Walden University

Human and Social Services

November 2020

Abstract

Research aimed at the observed stress from being a dentist, and how it may have impacted the occurrence of their suicide did not appear to be prevalent among empirical suicide studies. The purpose of this basic, qualitative study was to explore how the family members perceived occupational stress as precursor events in dentists who committed suicide. Using the interpersonal theory of suicide as the conceptual basis, 4 family members of dentists who committed suicide were interviewed to understand how family members perceived occupational stress in the dentist using semi structured interviews. Through a series of precoding and recoding, interview data were analyzed to identify similarities that may have identified the presence of occupational stressors as a precursor to suicide. There were six themes identified in the data: (a) observations of stress, (b) thwarted belongingness, (c) negative perceptions, (d) perceived burdensomeness, (e) work-life balance, and (f) substance abuse. These themes identified stressors that due to occupation was not the cause of the suicide, but there was a pattern of factors that preceded the suicide in each dentist. This study contributes to suicide research and should substantiate the need for education centered on the identification of suicide precursors. This study has the potential to create social change in reducing stigma associated with suicide, and encouraging individual, societal, and legislative level changes focused on increasing suicide education programs and suicide reduction interventions.

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Dedication

To my parents, Andrew and Connie Tillman, Sr, thanks for life, prayers, and scriptures, I was listening (sometimes). To my brother Andrew Tillman, Jr, my lifelong bestie, the future Dr. Andrae L. Abrams, my cousin/sister/friend Mrs. Glennis H. White without you, where would I be? And if you threw a party, thank you for…everything! To my oldest son Carlos A. Goodwin you have had to go on ***ALL*** my journeys with me, because of you I grew up, I found my voice, now, it is your turn. To my baby boy Melvin Williams, III, you are our miracle, our reminder to take nothing for granted, and that is my reminder also to you. To my love, Jusiyah A. Pettaway, you have enriched my maternal experience fully, I am so blessed to have you in my life and heart. To my husband, Melvin Williams, Jr, *whew, finally*! I know I did not always make it easy, thank you for being consistently you, my anchor, my shield, my compass, my champion, and my love.

Finally, Lillian Seabrook Rouse and Dolores Ealy Tillman, my namesakes, my grandmothers, black women, and descendants of slaves. I stand on your shoulders walking forward on paths you laid and cleared for me with your blood, sweat, tears, and sacrifices. Your legacies continue, your names will not be forgotten, we will continue to tell your stories.

Acknowledgments

Special Thanks to Dr. Fred Rueggeberg for being a positive presence on this journey, from the beginning, you have always treated me as a colleague and always made me feel grand! Dr. Robert Kaltenbach, thanks for allowing me to bounce my thoughts off you. It took a village to get me here, and I would like to thank my village. Dr. Veena Pannu, Mrs. Orris Knight-Sims, Ms. Ashley Christman, Mrs. Kandyce A'See, Mrs. Angela Jenkins, Mrs. Tammy Rodrigues, Ms. Gina Torres, Mrs. Anahi Caceres Delgadillo, Dr. Trina Hutto, Mr. Bernard Bembry, and Mrs. Jacquelyn Byrd. Thank you all for putting up with me, encouraging me, fussing at me, checking in on me, holding me accountable, bandaging me, restoring me, laughing with me, crying with me, and staying with me through this journey.

My lifelines and fellow doctoral candidates, Mrs. Carolyn Hanson and Ms. Crystal Perry, we are on this journey together, and you truly helped keep me going! My loves: Dr. Busola Olaseinde, Dr. Samantha Cook, Dr. Deja Opusunju, Dr. Elizabeth Muraya, Dr. Brandon Sadberry, Dr. Destiny Redding, Dr. Kamarin Moon, Dr. Lincoln Fantaski, Dr. Matthew Giordono, Dr. Tamika Cooper-Brown, Dr. Emily Latteri, and my baby doll, Tiffany McNear. Because of you all, I kept going, and because of you all I will continue to go forward. I would like to acknowledge my dissertation committee, I have learned invaluable lessons on this journey, the road was long, and I am glad this task is completed. Finally, to all the families who have lost loved ones by suicide, I hope you are able to gain comfort in the memories of those you have lost. To those families and individuals who participated in this research, thank you for trusting me with your stories.

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Chapter 1: Introduction to the Study

Introduction

The empirical exploration of suicide is not a new concept. European scholars began suicide research in the second half of the 19th century in response to suicide occurrence rates (Barbagli, 2015). Consequently, a scholarly exploration and examination of statistics, which were compiled by the governments of several countries, began with the hope of processing, interpreting, and verifying the reliability of the collected data (Barbagli, 2015). These scholars found that there was an increase in suicide rates spanning from the beginning of the 19th century, which continually increased in almost all the civilized countries in Europe and the New World (Barbagli, 2015). Over 20 years later, Durkheim (2005) stated that the exponential increase in voluntary deaths in the span of a century instituted a "pathological phenomenon" that became a greater threat every day (Barbagli, 2015). Many years later, while researchers approach the task differently, there is still a need to understand and empirically explore the phenomenon of suicide.

Death is a natural part of life. Most people do not understand why some people choose to take their own lives and find it difficult to make meaning out of suicide (Turner, Wooten, & Chou, 2019). Preceding the Middle Ages, suicide appeared in ancient writings from Greece, Rome, and even the Bible (Society for Old Age Rational Suicide, 2015). The empirical discussion of suicide has been taking place for centuries; yet, in many societies, cultures, and religions, it is still seen as a taboo topic (Shneidman, 2014; Stack & Kposowa, 2011). In some geographical locations, the attempted act of

suicide is considered a crime (Shneidman, 2014; Stack & Kposowa, 2011). This has resulted in decreased reporting of suicide and in the search for help from those who may suffer suicide ideation for fear of negative outcomes.

Although suicide remains an epidemic, the focus of this study was centered in the United States. The data and statistical background came from research and data specific to the United States. The American Foundation for Suicide Prevention (AFSP, 2016) reported that over 100 people die by suicide each day in the United States, ranking it as the 10th leading cause of death in the United States. The Centers for Disease Control and Prevention (CDC, 2018) reported that during the years of 2000 through 2016, suicide rates increased from 1% per year (2000 thorough 2006) to 2% per year (2000 through 2016) in people in the United States ages 10 or older, also substantiating the ranking 10th in leading causes of death since 2008. More understanding of why suicide has been and continues to occur at a high rate is needed.

In order to explain the rate of suicide, researchers have explored why suicide happens. In the evaluation for a cause, researchers found that most people who think about committing suicide never actually make an attempt at it (Klonsky, May, & Saffer, 2016). The World Health Organization (WHO, 2019) estimated that the number of suicides totaled close to 800,000 annually; yet, for each of those, there are many more attempted. A previous attempt is a critical indicator of suicide risk (WHO, 2019). The critical component in suicide prevention is the identification of those individuals who are at greater risk of attempts; to find effective ways to reduce or eliminate suicide, there must be a clear answer to why it happens (Klonsky & May, 2013; Skegg, Firth, Gray, &

Cox, 2010). Human service and mental health workers across multiple disciplinary fields have begun to develop and participate in an assortment of crisis and suicide prevention efforts (Rector, 2017). There is a known crisis in the continuously elevated rate of suicide, but, in order to prevent suicide, there has to be a way to identify the likelihood of its occurrence.

Suicide is not always predictable; however, learning more about the interaction of factors (biological, psychological, situational) may allow for the recognition of risk factors that can lead to earlier interventions to reduce the rate of suicide (Fawcett, 2012). Medical professionals (physicians in particular) have an elevated risk of suicide as compared to the general population (Goldney, 2016; Milner, Maheen, Bismark, & Spittal, 2016) with a reported rate of 8.04% as compared to the rest of the work force that ranks at 4.3% (Fink-Miller & Nestler, 2017). There are several theories on why this elevated risk occurs, which range from stress, social isolation, the expectation to be and possess superhuman prowess (intellectually, emotionally, and physically), fatigue/burnout, and clinical errors (Goldney, 2016; Milner et al., 2016; Sinha, 2014). The risk factors which may indicate risk for suicide, and those known risk factors which are experienced by health professionals as a function of their occupation spotlight the need for more exploration into suicide in occupational groups.

In this chapter, I present the background, problem statement, purpose of the study, and the research question. I then provide operational definitions, assumptions, scope and delimitations, limitations, and potential significance of the study. This chapter ends with a brief summary of the study.

Background

There is no shortage of suicide research. Numerous theories and ideas of why suicide occurs have emerged, which has led to the presentation of more information for continued scientific inquiry. The empirical study of suicide has occurred for many years in many academic and scientific disciplines (Ajdacic-Gross, 2015, Boden, Gibson, Owen, & Benson, 2016). Even though research has continued and expanded, when it comes to determining why suicide happens, there are still more questions than answers (O'Connor & Pirkis, 2016). As a result of the continuation of empirical study on suicide causation, there have been many theoretical and conceptual explanations for suicide occurrence (Agnihotri & Aruoma, 2016; O'Connor & Pirkis, 2016). These explanations include genetic predisposition, the presence of psychological factors, socioeconomic status and influence, access to means, previous attempts, and occupation (Agnihotri & Aruoma, 2016). These factors are not sole causes, but are important to explore in further detail.

Genetics and Suicide

Suicide has been explained as an inheritable risk factor. Tanaka and Kinney (2011) asserted that genetic factors contributed to suicide risk akin to the way infections or immunity factors can be transmitted to family members (e.g., mental or other inherited disorders). Tanaka and Kinney also proclaimed that suicide rates would be higher in those occupations that had exposure to higher risk of infectious diseases (i.e., health professionals, sanitation workers etc.). Pendanam (2018) further examined heredity's influence on suicide and noted that heredity is one of the greatest influencers on human behavior. Genetic predisposition for suicide risk should be noted particularly as there

might be a generational connection to seeking specific occupations, especially in medical professionals that have been shown to have an increased rate of suicide.

Psychological Factors

An alternative explanation of suicide focuses on the presence of behavioral traits that facilitated the risk of suicidal behavior. Some traits that are pointed out in this point-of-view are angry impulsivity associated with bipolar disorder, substance abuse, and Cluster B personality disorders (Fawcett, 2012). Personality disorders as described in the *Diagnostic and Statistical Manual of Mental Disorders 5th* Edition (DSM-5) as the way a person thinks, feels, and behaves that deviates from the expected ways of his or her culture, which causes distress and impairment and lasts over time (American Psychiatric Association [APA], 2013). These personality disorders are arranged into three clusters: A, B, and C; Cluster B disorders are associated with those behaviors that are categorized as dramatic, emotional, and erratic (APA, 2013). These characteristics spotlight an innate lack of impulse control and emotional regulation (Hoermann, Zupanick, & Dombeck, 2016). There is a chance an individual could have particular behaviors that make him or her at a higher risk for suicide.

Innate factors elevating the risk for suicide are critical to identify, but the impact of events that have stressful outcomes are also important to identify. Although the connection between anxiety disorders and suicidal behaviors have been a topic for much debate within the literature, there has been a consistent association between increased suicidal behavior and anxiety disorders (Baldessarini, Vázquez, & Tondo, 2016; Bentley et al., 2016; Nepon, Belik, Bolton, & Sareen, 2010; Oude Voshaar, van der Veen, Hunt,

& Kapur, 2016). Not all suicidal individuals have mental health diagnoses; however, the cause can be attributed to some mental health issues, such as a traumatic event or impulsive behavior (Norfolk & Suffolk, 2015). There are certain events that may cause an individual distress to a level that may increase their risk for suicide. It is critical to know how stress reactions contribute to suicide causation.

Occupation

In research on high-risk occupations for suicide, Roberts, Jaremin, and Lloyd (2013) found a link between the increase of rates associated with ease of occupational access to a method of suicide. There is a vast amount of research on the correlation between occupation and suicide (Howard & Krannitz, 2017; Milner, Witt, Maheen, & LaMontagne, 2017; Tiesman et al., 2015). Scholars have explored that relationship in one of two ways, the first being suicide rates in a particular occupational group, the second being job-related factors that influence suicide (Alexopoulos, Kavalidou, & Messolora, 2016; Milner, Spittal, Pirkis, Chastang, Niedhammer, & LaMontagne, 2017; Nishimura et al., 2004; Stallones, Doenges, Dik, & Valley, 2013). The occurrence of suicide in specific occupations may be tied to that what that job entails and how that job impacts the individual.

In this study, I addressed the gap in knowledge about suicide in an occupational group (dentists) and the perceived presence of stress as it was experienced by their family members, as a precursor to suicide. This study has the potential to initiate a more comprehensive examination of dental school programs that could lead to an expansion of their curricula to educate predental students (and potentially their family members) on

ways to manage/cope with being a doctor and early intervention strategies for stress management.

Statement of the Problem

Empirical data cannot fully pinpoint why suicide still happens. The AFSP (2016) stated that there is no single factor that causes suicide. There are, however, several theories on why people try to kill themselves. Although no one has been able to substantiate that occupation alone is a risk factor in suicide, the higher rates of suicide in certain occupational groups cannot be overlooked (Howard & Krannitz, 2017; Min, Park, Hwang, & Min, 2015; Peterson et al., 2018; Roberts et al., 2013; Sancho & Ruiz, 2010). The extent to which personal characteristics of a professional group increase the risk of suicide should be further explored, as medical professionals appear to have an elevated rate of suicide (Goldney, 2016; Milner et al., 2016). Although there seems to be some link between stress and occupation, there is not a full understanding of these factors as precursors for suicide.

Purpose of the Study

The purpose of this generic, qualitative study was to increase the understanding about suicide, specifically in dentists, and how family members perceived the stress experienced by the dentist prior to the suicide. Petersen and Burnett (2008) researched suicide in dentistry and found that previous studies had significant methodological concerns; this has been identified as a recurring occurrence (Lange, Fung, & Dunning 2012; Roberts et al., 2013; Yellowlees, 2018). This contribution further validates the

need for new research on suicide in dentistry that can avoid those same methodological issues.

In this study, I used a generic, exploratory, qualitative methodology to examine occupational or other stress as perceived by family members, as a precursor to suicide among dentists. The goal was determine how occupational stress lead the way to the suicide event, and how that stress was perceived by family members.

Research Question

The research for this qualitative study was be guided by a single question:

1. How was occupational stress perceived by family members as a precursor experience for dentists who have committed suicide?

Conceptual Framework

The conceptual base for this study was Joiner's (2005) interpersonal-psychological theory of suicidal behavior. This theory acted as a framework to guide the exploration of perceptions of stress as observed by the family members. Joiner explained that if two psychological states (perceived burdensomeness and low belongingness) are present in an individual's mind simultaneously, for a length of time, it may result in the development of the desire for death by suicide. Joiner proposed that a person will not commit suicide unless he or she has the desire to die (by suicide) in addition to the ability to do so, which is developed as a result of the inability to cultivate an instinct for self. The perceptions of burdensomeness and belongingness, as reported by family members, will help to identify components that may have increased the risk for suicide when

present solely, or in conjunction with, other identified stress factors. This theory will be further expanded in Chapter 2.

Nature of the Study

The nature of this study was a qualitative, generic approach. This method was the most pragmatic approach due to the absence of participants in suicide research because there is not a victim to interview. Scholars use the generic, qualitative methodology to focus on the discovery and understanding of a phenomenon and the perspective of the people involved, while allowing for more flexibility in the approach, which may not conform to a particular qualitative approach (Caelli, Ray, & Mill, (2003). Thus, the primary focus of this study was on the perceptions of the surviving family members regarding dentists who have committed suicide. I detailed the experiences perceived by family members of the decedents to identify the presence, if any, of occupational stress, then looked at how those perceptions preceded suicide in dentists. The qualitative approach was generic/basic in nature, which allowed for more flexibility in the methodology and practical application.

The family members of deceased dentists provided the details of their observations. Through interviewing (using a methodology with a more adaptable nature), information on the perceived lived experiences was gathered, which allowed for a more in-depth understanding of the perceptions and opinions, and subsequent underlying influences, that may have been present leading up to the suicide.

Definitions

Dentist: Individual who has completed and been awarded a doctorate degree of medical dentistry (DMD) or dental surgery (DDS) and is qualified to treat the diseases and conditions that impact the teeth, mouth, and gums (American Dental Association, n.d.). This term will also include any specialty areas of doctoral-level dental practice to include research, academia, diagnosis, tooth replacement, design, repair, and extraction. The dentist will not have had to practice dentistry for any specific length of time, but this distinction is being made to signify that he or she may not be working in traditional clinical dental settings but is a dentist as defined by the ADA.

Family member: A nuclear or extended social unit created by blood, marriage, or adoption (Nam, 2004). For this study, the family member is a part of the social unit that encompassed the dentist who committed suicide.

Suicide: Any act or instance of self-injurious behavior with the sole intent to die by any voluntary and intentional method (Shneidman, 1977).

Suicide attempt: Any act or instance of self-injurious behavior with the sole intent to die (literally or figuratively) by any voluntary and intentional method, in which the sole intent was to result in death but the individual fortuitously survived (Shneidman, 1977).

Suicidal ideation: Talking about, threatening, considering planning, expressing, or writing about committing an act of self-injurious behavior with the sole intent to die by any voluntary and intentionally lethal method (Kennebeck, Bonin, & Blake, 2017).

Stress/anxiety: As explained by the American Institute of Stress (2020), stress or anxiety is the condition/feeling experienced when an individual perceives that demand exceeds his or her personal or social resources. For the purpose of this study, this definition was modified to focus on negative stress, caused from work, school, major life changes, or traumatic events.

Victim or suicide victim: An individual who has suffered harm (Department of Justice, 2016) as the result of self-injurious behavior with the sole intent to die (Shneidman, 1977).

Assumptions

There were several assumptions in this study, but the most central was that the dentists' stress from their occupation was observable to their family members. An additional assumption had to do with the ways in which an individual may have hidden or handled stress. For this study, the interview with the family member was the bedrock of the entire study, and I operated under the supposition that the individuals who committed suicide did not hide their stress from their family, and it was an obvious and observable factor by the surviving family members. Another assumption was that each family member was of sound mind and judgement, would cooperate fully, and complete the interviews providing relevant information that would benefit the research.

Finally, there had to be an assumption that the suicide was the result of stressors occurring occupationally and not from other factors such as copycat suicides. The current study operated from the standpoint that the suicidal act was associated with stress associated with work and thus occurred as a result of suicide ideation.

Scope and Delimitations

The initial plan of action was to develop a research design that looked to substantiate if dentists had an elevated rate of suicide, and how that related to other occupations. This was initially led by literary empirical exploration that focused on research on suicide in dentistry only yielding results that showed data on medical professions compiled into a single group as being at an elevated risk for suicide (Milner, Spittal, Pirkis, & LaMontagne, 2013; Petersen & Burnett, 2008; Roberts et al., 2013; Yellowlees, 2018). The initial research was then reshaped to focus on the validation of the rate of suicide for dentists as an occupational group, because it appeared that there was a gap in research geared toward this occupational group (Petersen & Burnett, 2008). In this study, I focused on suicide in dentists as a single occupational group; thus, I expected that there were situations and experiences that will be specific to dentists that may not be generalizable to other physician groups or populations of practitioners.

This study approached research on suicide from a different perspective. In previous suicide research, scholars identified issues with inconsistencies in the findings in how the studies were being conducted in terms of how the data were reported, collected, and coded (Lange et al., 2012; Roberts et al., 2013; Yellowlees, 2018). Also, there must be some mention of the way deaths were coded or defined based on causation that may have been erroneous dependent on how or who reported it (Yellowlees, 2018). I approached the study of the suicide of dentists from a qualitative perspective, which was not seeking to quantify the rate of occurrence but to understand the contribution of stress

as a precursor factor. This approach was not dependent on those factors that have led to inconsistencies in previous research designs.

The interpersonal theory of suicide was the best choice for the study; however, other suicide theories were considered. The focus of the study of suicide as related to occupational risk did lead towards the use of a theory of suicide rooted in an economical view. This theory focused more on economic crisis and unemployment as a cause for suicide, which was not appropriate for this study (Hamermesh & Soss, 1974). Shneidman (1993) had a theory of suicide called psychache, and claimed that suicide was not necessarily the desire to die but more so the means to end psychological pain, which was defined as mental pain that could come from shame, guilt, humiliation, loneliness, fear, angst, or dread of growing old. Shneidman focused on thwarted belonging as one of four ways that suicides were attributed to frustrated needs, which led to the exploration of belongingness and needs and to the interpersonal theory of suicide by Joiner (2005). The addition of the concept of stress and anxiety to that theory created the foundation for the basis for the design; this is detailed more in Chapter 2.

Lastly, the research was conducted using participants in one particular area of the country, which also impacted the scope of this study as the focus of the interviews was specific to certain individuals. Other individuals in the same occupational group in other areas of the nation may not have had the same results. Each individual person experiences and handles death and grief differently, so the family members being interviewed for this study had perceptions and experiences specific to their personality and or family, further limiting the generalizability of family member perceptions of

stress. The ideal participants have had some years to grieve and seek counseling and or support services.

Limitations

The most profound limitation of suicide research is the absence of a victim to interview. An additional limitation in the study of suicide is the inconsistent and limited allowance for comorbidity; it has been difficult to account for other confounding factors that may have directly or indirectly impacted the occurrence of suicide in an individual (AFSP, 2016; Nepon et al., 2010; Pendanam, 2018).

There was also insufficient documentation on suicide occurrences, such as how the deaths were reported and recorded, which led to limited data and the need to apply insinuations in the examination of death statistics and mortality data. For example, some suicides may have been reported as accidental death or injury and were based on the medical examiner or coroner's best medical opinion (CDC, 2012).

Additionally, how the data are being studied and coded may have made it difficult to study suicide. Further complicating background research on dentist suicides is the previous act of compiling all physicians into one occupational group. There is an expectation of some bias in the way the suicide was reported, and I expected to have a limited number of cases to establish baseline data for the true occurrence rate of suicide in dentists.

Significance of the Study

One of the main motives in proposing this research was to fill the gap in previous research and provide an original contribution that would accurately report on the

experiences of family members leading up to and resulting from a dentist's suicide. In attempting to research the topic of suicide, there were some factors that complicated the way it was researched. The method of report is of concern due to previous suicide research that only acknowledged the completed act and not the attempts. Also, the lack of presence of the victim created some difficulties in conducting suicide research (Lange et al., 2012; Petersen & Burnett, 2008). Because the decedent was not available to interview, the focus was on the perception of the events, factors, and occurrences that preceded the act of suicide as perceived and experienced by the family members of the dentists. Stress did not appear to be explored in previous studies as a contributing factor in suicide among dentists, so the perception of stress and the lived experience of the suicide was explored from the point of view of the surviving family member. This study served to illuminate possible precursors to the suicide attempts that may guide future research on how to recognize and address suicide in dentistry.

Significance to Practice

The consistent ranking of suicide as a leading cause of death in the United States (WHO, 2019) has been continuously supported in suicide research. Suicide is a major health epidemic, and it impacts individual lives and communities throughout the nation (O'Keefe et al., 2014). The CDC (2018) reported a nationwide increase of suicide rates from 2014 to 20016 with 25 states having an increase of more than 30%. The first way that this research impacted practice was by spotlighting the subject on suicide. Suicide is thought to be a response to overlapping stimuli, pain (which can be physical or psychological), and despair (Simmons, 2018). The suicide occurred when the individual

experiencing despair concluded that he or she had no hope for an acceptable quality of life (Simmons, 2018). This is similar to the reasons some patients choose to die with dignity; yet, those individuals who chose to do so are separated in their desires from those of the individuals with suicidal ideations (Death with Dignity National Center, 2018). The American Association of Suicidology (AAS, 2017) stated that physician aid in dying was not the same thing as suicide but acknowledged the overlap in topics. There is still a real stigma around suicide, particularly among those who choose to die by their own choice (Death with Dignity National Center, 2018). The stigma surrounding suicide and physician aided dying is still an issue. This research aimed to provide an understanding to what led to the desire to die.

This research added to the discussion on the importance of establishing and identifying precursors for suicidal behaviors, to increase resources and efforts geared towards suicide prevention. The CDC (2018) reported that suicide still remained a leading cause of death nationally; however, the possibility for the greatest success in suicide prevention lies in the collaborative efforts among government, communities, academia, and the media to focus on comprehensive community interventions all working towards suicide prevention. The outcomes of this research contributed to that collaboration by offering more perspectives about observable suicide warning signs and precursors. The goal of this research was to aid in the identification of warning signs that may make the earliest possibly interventions for preventative interventions possible in those individuals with suicidal ideations. The AAS (2018) recognized the need for research and the implementation of effective strategies as the only way to impact suicide

as a public health issue. This research was conducted to add to the needed research in support of ways to identify what leads to suicide in an attempt to help with earlier identification of suicide risk.

Significance to Theory

The identification of any warning signs for suicidal behavior is vital to the fight to reduce the number of suicides that occur nationally. Suicide research is dependent upon empirical and definitive information as to what made a person choose to commit an act of suicide, and what steps preceded that action. Ideally, it would be a step forward if those occupational groups that reported high suicide rates developed coping strategies and addressed suicide tendencies at the curriculum level.

Significance to Social Change

One implication of this study was to lessen the social, religious, and cultural stigma that is attached to the subject of psychological disorders and mental conditions. Although the attention to and support for mental health issues and illnesses has grown and continues to grow exponentially, there are still some significant misconceptions and stigma about suicide, those who attempt it, and those who think about it that need to be addressed on a multidisciplinary level (AAS, 2018). There are some areas globally that avoid the topic altogether, or view suicide as an event that should remain unspoken (Lange et al., 2012; Yellowlees, 2018). There is a public (while maybe not the most popular) opinion of suicide being the ultimate act of selfishness or being associated with mental health issues; research has revealed that this is not the case (AAS, 2018). Research has been a major catalyst in the movement towards the reduction of the

negative assumptions of mental health as related to suicide, with more research there will be more positive social change.

The aura of negativity that surrounds suicide has resulted in situations that no one wants to talk about it. Individuals will not always seek out the help that they need, and those who have had to endure suicide on a personal level tend to avoid being open about its impact because of the uncertainty of how the world will view them. Negative connotations tend to leave an individual with feelings of shame or guilt for things he or she may not have control over (Goldstein, 2017). Empirical can play a direct role in helping to reduce how people perceive those impacted by suicide.

Positive social change can only come through breaking through the misconceptions of mental illness and providing reassurance of support, understanding, and compassion. The more suicide is discussed, the more the shame, disgrace, and dishonor that is attached to the subject of suicide can be eliminated. Through open dialogue, research, and education, there can be a future in which suicide is decreased substantially. If individuals in communities have more information and are more informed on suicide and triggers, then the likelihood to seek help will increase, thus decreasing the numbers of suicide victims. However, this must begin in the home, and the only way that change can start is through individuals educating themselves on these topics and becoming agents for change.

Summary and Transition

In this chapter, some background information on the early stages of the scholarly exploration of suicide was introduced with the early works of Morselli. The phenomenon

of suicide is not predictable, but there are some risk factors that, when observed early enough, may lead to the implementation of interventions that can help reduce the rate of suicide (Fawcett, 2012). This purpose of this study was focused on the perceptions of stress as perceived by family members.

The theoretical basis for this study was the interpersonal theory of suicide proposed by Joiner (2005), which states that an individual will not commit the act of suicide unless he or she has the desire to die by suicide, and the ability to do so. The two major components of the theory are the presence of perceived burdensomeness and thwarted belongingness, when present simultaneously and for a length of time, result in the development of the desire for death (Joiner, 2005). The nature of this study was qualitative, and included a generic approach, which allowed for the discovery and understanding of a phenomenon and perspective of the people involved (Caelli et al., 2003). This study mainly focused on the occupational group dentists, as suicide victims, and their family members who will be asked to describe their perceptions of occupational stress preceding the suicide event. The assumption was that occupational stress contributed to the suicide and that the family member witnessed that stress. I focused only on dentists in an attempt to limit the methodological issues that occurred in previous occupational suicide studies, foremost that of lumping multiple physician groups into one research group. The major limitation of suicide research is the absence of a victim and the reliance on previously inconsistent data. This study contributed to positive social change by furthering the conversation of suicide.

In Chapter 2, I focus on the empirical support of the emerging themes discovered during the review of the literature in preparation of this study.

Chapter 2: Literature Review

The purpose of this generic, qualitative study was to increase understanding of how stress facilitated suicide in dentists based on the perceptions of the family member. In this literature review, I address the themes in the scholarly research related to my topic.

Chapter 2 contains an introduction and restatement of the problem and purpose of the study in addition to the strategies used to conduct a thorough search for current literature. In this chapter, I help to substantiate relevance of the study through the identification of current literature that corresponded to the themes identified for this research topic. The theoretical framework derived from Joiner's interpersonal theory of suicide is outlined in detail, as well as the conceptual basis for correlation of stress disorders and suicide risk, ending with a summary and conclusion for the chapter.

Literature Search Strategy

The founding elements of this research were based on *suicide rates in dentistry*, which were the first terms used when trying to gather information on this topic. Although I was able to find some articles, the information was not current or empirically significant to differentiate dentistry as a separate occupational group in suicide research. From that point forward, the scope and terminology used to gather data included other elements that could narrow down the topic area to dentistry, and then allowed me to determine other terms and areas I could use to enhance the way I research my initial topic of suicide in a particular occupational group. I initially tried to search the topic of *suicide statistics in dentistry,* using various sources to include scholarly articles, government

documents and data sets, Department of Health and Human Services publications, and web information using Google Scholar. This led me in a direction that did not serve well to collect enough background information to determine if the topic of suicide in dentistry was an appropriate and manageable topic.

I was able to broaden my search and started to include Augusta University's Greenblatt Library to access databases such as PubMed/Open Access, Academic Search Complete, and Taylor & Francis Online. Although a good number of databases and journals were the same in both libraries, there were different date ranges available for the information they both had that allowed me to have a more comprehensive search of the chosen databases. I tried to change the way in which I searched and was able to use *suicide* as a general topic and from there review the direction of published research, which used other factors and variables that I was able to incorporate as keywords and phrases to help my search.

Other factors were considered that could be used as keywords or phrases to help guide the way in which I searched within the databases. The phrases and keywords used to obtain literature and current suicide data included the following: *suicide, suicide attempts, suicide ideation, suicide in dentistry, occupational suicide, stress and suicide, survivors of suicide, theories on suicide, theories on suicide in occupations, theories on suicide in dentistry, warning signs of suicide, warning signs of stress, anxiety and suicide, predictors of suicide,* and *suicide risk factors.* Much of the literature was gathered through seeking peer-reviewed journals from the Walden University Library,

focusing on databases such as EBSCOhost, ProQuest, Academic Search Complete, PsychARTICLES, Health and Psychosocial Instruments, and PsycInfo.

Conceptual Framework

The theory that formed the framework for this study was the interpersonal theory of suicide (Joiner, 2005). Joiner's (2005) theory is predated by a 15-year gap during which no new theoretical explanation or empirical consideration for suicide were offered; there was a limited number of influential and rational theories available on suicide (Joiner, 2005; Van Orden et al., 2010). This can be attributed to the overwhelming tasks required for suicide research, beginning with the extent to which all facets of each individual must be considered, ranging from basic demographics (age, race, and sex) to more complex elements (biological predisposition, cognition, and psychological factors) to abstract concepts (socioeconomic status, pain, and emotional health). Suicide researchers also must consider compounding factors and new elements that may not have been known in previous research. Further complicating this issue is the absence of first-hand information that leaves the researcher reliant on several ambivalent variables that have resulted in skewed data and reporting. The interpersonal theory of suicide originated from Joiner's efforts to create a more current explanation that would expand on existing models of suicide research while providing a deeper analysis of suicide-related phenomena and behaviors.

Joiner's (2005) formulation of the interpersonal theory of suicide began with an acknowledgement of the other theorists of the past and present; however, Joiner explained that the new theory served in a more collaborative capacity by adding on to

what was already present. However, Joiner also acknowledged that there is also the need to improve upon and expand or modify theories, with a goal to provide accuracy and comprehensive explanations for suicide.

Joiner (2005) proposed that the desire to commit suicide is initiated by the simultaneous presence of two interpersonal concepts: thwarted belongingness and perceived burdensomeness and the subsequent hopelessness about these. Joiner claimed that active suicide ideation is a behavioral manifestation that develops from the desire for suicide. Although the interpersonal theory focused on two components (belongingness and burdensomeness), the discussion on the desire to commit suicide established the footing on which the theory stands; desire to commit suicide is differentiated from capability to commit suicide (Van Orden et al., 2010). The topic of desires begins with a review of the consideration and understanding of human needs and motivation, in terms of the attainment of wellbeing that occurs when an individual is driven to meet those needs (Joiner, 2005).

Pivotal to early suicide research were the studies of Shneidman (1996) who categorized suicide into one of five clusters of psychological needs that reflect various types of psychological pain: thwarted love, ruptured relationships, assaulted self-image, fractured control, and excessive anger related frustrated needs for dominance. From this categorization, Joiner (2005) condensed the needs into two major categories: belongingness (thwarted love, ruptured relationships) and burdensomeness (assaulted self-image, fractured control, anger related to frustrated dominance). Other theories on suicide have not emphasized the explanation for why most people who think about

suicide do not actually make an attempt (Chu et al., 2017). However, Joiner pointed out that the key in the conception of the desire for death in an individual comes from the presence of the thwarting of these needs. The basic hypotheses for this theory are four-fold and are as follows:

1. "Thwarted belongingness and perceived burdensomeness are proximal and sufficient causes of passive suicidal ideation;
2. The simultaneous presence of thwarted belongingness and perceived burdensomeness, when perceived as stable and unchanging (i.e., hopelessness regarding these states), is a proximal and sufficient cause of active suicidal desire;
3. The simultaneous presence of suicidal desire and lowered fear of death serves as the condition under which suicidal desire will transform into suicidal intent;
4. The outcome of serious suicidal behavior (i.e., lethal or near lethal suicide attempts) is most likely to occur in the context of thwarted belongingness, perceived burdensomeness (and hopelessness regarding both), reduced fear of suicide, and elevated physical pain tolerance." (Chu et al., 2017 p. 3)

These hypotheses have supported the correlations between suicidal desire, perceived burdensomeness, and thwarted belongingness (Van Orden et al., 2012). Joiner's (2005) theory has been acknowledged as a contribution to the advance of scientific and clinical understanding of suicide.

Assumptions

The main assumption in the interpersonal theory is that perceived burdensomeness and thwarted belongingness are individual, but related constructs. Chu

et al. (2017) described that suicide risk is heightened due to hopelessness related to the mutability of both thwarted belongingness and perceived burdensomeness. There is a nomological rubric for suicidal behaviors in which the two constructs exist as separate but overlapping nonredundant constructs (Van Orden et al., 2012). Although this assumption is supported empirically, it needs more rigorous testing due to limited sample sizes (Van Orden et al., 2012).

Thwarted Belongingness

The first cornerstone in the interpersonal theory of suicide looks at the need to belong, which encompasses two components: frequent interaction and persistent caring. Chu et al. (2017) discussed the fundamental need for humans to belong; when that need is unmet, it is followed by a host of negative health outcomes that include the increased ideation for suicide. Joiner (2005) explained that a person must have interactions with others and a feeling of being cared about in order to have a satisfied need to belong; yet, those interactions should be frequent and positive because stable relationships satisfy the need to belong more fully than unstable ones. Joiner's term thwarted belongingness refers to loneliness, the absence of reciprocal care, non-intact family, social withdrawal and family conflict.

Perceived Burdensomeness

The second element to the interpersonal theory of suicide encompasses the presence of social disconnection and the inaccurate belief that an individual's death is worth more than his or her life, as well as feelings of expendability (Chu et al., 2017). The caveat to this component is the presence of the perception of burdensomeness by an

individual and a miscalculation for the need of self-sacrifice (Chu et al., 2017). An individual who idealizes, attempts, or dies by suicide erroneously interprets his or her self-hatred as meaning they are expendable (Chu et al., 2017). In some cases, perceived burdensomeness presented itself through the presence of shame. In a study looking at predicting suicide ideation, perceived burdensomeness was examined through the lens of shame as an emotion resulting from self-consciousness stemming from other people's negative assessments (Zhao et al., 2020). In this instance, thwarted belongingness is explained as leading to incapacitating experiences such as a strong rejection of self (Zhao et al., 2020). Feelings of not being valued, or as being seen negatively by others, are ways the perception of burdensomeness can lead to erroneous feelings that can increase the belief that suicide may be the only way to relieve that burden.

Acquired Capability

Suicidal behavior is difficult to process because it goes against the most primal instinct for self-preservation, but occurs when an individual possesses the ability to move past the instinct to survive (Chu et al, 2017; Ma et al., 2016). The acquired capability for suicide is a third component in an individual's shift from desiring to commit suicide to suicidal intent (Ma et al., 2016). The capability to commit suicide is viewed as continuous and can build up over time; the possibility of suicide is seen as more probable in individuals who have a lowered fear of death and an elevated pain tolerance (Ma et al., 2016). Wagshul (2018) determined that the presence of increased hope can reduce thwarted belongingness and perceived burdensomeness, while increasing the capability for suicide. One explanation Wagshul provided claimed that the simultaneous increase

and decrease caused by hope, may be found in the constructs of the locus-of-hope that is not only derived from the individual (internal), but from others as well (external). Acquired capability for suicide can develop as a result of what others do just as much as what the individual does; the interpersonal theory also claimed that there are clear paths in which the desire for suicide, in addition to fatal and nonfatal suicidal behaviors, develop (Chu et al., 2017).

Application

The interpersonal theory of suicide made its appearance in 2005, but since that time, the theory has been refined, and the scientific community has been encouraged to test the theory (Hjelmeland & Knizek, 2019). There are many publications on suicide research journals that refer to the theory or use the theory in their research (Hjelmeland & Knizek, 2019). The theory is universally accepted, although not all researchers share this sentiment (Hjelmeland & Knizek, 2019).

Joiner's (2005) theory has been tested empirically on numerous occasions since its development. Scholars have assessed the various facets of the theory across numerous populations. The interpersonal theory of suicide has had 20 direct empirical tests, with the results substantiating the theory's main predictions (Ma et al., 2018). Ma et al. (2018) sought to determine the generalizability of the theory to determine if it explained suicide ideation within a subgroup of individuals. In a multi method analysis of 1,321 participants who reported suicide ideation, there were four patterns of risk factors that emerged; those with more elevated mental health symptoms reported the highest levels of thwarted belongingness and perceived burdensomeness (Ma et al., 2018). Ma et al.

concluded that due to a lack of support for the theory's predictions across subgroups and a full sample, the theory seemed questionable for broad use. The interpersonal theory of suicide has been used to study many topics surrounding suicide, and it has been used in many studies on subgroups of individuals ranging from Asian Americans, prisoners, medical students, veterans, geriatric populations, and psychiatric inpatients (Hjelmeland & Loa Knizek, 2018; Labrecque & Patry, 2018).

This theory is appropriate for use in suicide research, and it was used in the study of the subgroup of dentists, which does not appear to be an area that has been researched using the interpersonal theory of suicide. This theory was appropriate in this research because it does not need to be generalized to large populations. This study can add to the data that substantiates the use for the interpersonal theory of suicide.

Literature Review

Everyone experiences stress at some point in their lives due to a variety of reasons (National Institute of Mental Health, 2018); it is a component of life, and the term stress is often used synonymously with life events or negative life experiences (Rosiek, Rosiek-Kryszewska, Leksowski, & Leksowski, 2016). There are varying types of stress, and they each have the potential to impact an individual's physical and mental health (National Institute of Mental Health, 2018). As a response to stress, an individual's cognitive and emotional setting changes, and behavioral defenses will appear in a person who is actively trying to adapt to stress (Rosiek et al., 2016). Stress, when occurring for a long period of time, can be systemically overwhelming and just like many other conditions (when present in an overloading capacity) can lead to mental health

disturbances and the appearance of disease (Rosiek et al., 2016). While not all stress is negative, chronic life stressors (i.e., trauma, interpersonal, and occupational/academic events) can lead to cognitive misrepresentations that lead some individuals to be more vulnerable to the influences stressors and are important risk factors for suicide (National Institute of Mental Health, 2018; Rosiek et al., 2016). Stressors that resulted in feelings of burdensomeness regarding the responsibilities of professional life may be predominantly significant to explore as the negative occupational and academic events escalate the risk for suicidal behavior and suicidal thinking (Rosiek et al., 2016).

The diathesis to suicidal behavior is continuous. Hormone responses to stress serve as a diathesis that strengthens the stressor-suicidality link (Eisenlohr-Moul et al., 2018). The diatheses became more prominent during the progression of the suicidal process that generally precedes suicide (van Heeringen, 2012). Suicide typically is preceded by multiple nonfatal attempts, which are normally repeated with an increasing degree of severity, intent, or lethality of the method used (van Heeringen, 2012). Suicide studies that look at diathesis-stress models typically highlight the triggering role of developmentally significant stressors as a first step in the onset of suicidal ideation and behavior (Eisenlohr-Moul et al., 2018). Several scholars have provided support for a chain reactions on the incidence of suicide attempts, and each time such a suicidal method started, it became easier to access in the memory and took less stimulus to trigger a reaction to subsequent events (van Heeringen, 2012). Each succeeding suicide attempt is associated with a greater probability of a subsequent suicide attempt (van Heeringen, 2012).

O'Connor, Dooley, and Fitzgerald (2015) aimed to create a Suicide Risk Index (SRI) using demographics and situational and behavioral factors with a known association to suicidal behaviors. O'Connor et al. determined the predictive power of the SRI to forecast suicidal behavior when mediated by proximal processes (i.e., personal factors, coping strategies, and emotional stress). In order to develop the SRI, O'Connor et al. spotlighted risk factors that were divided into three main categories: demographics, behavior, and situation. O'Connor et al. determined that although stress is associated with suicidal behavior, individuals at high risk for suicide may be protected by the presence of high self-esteem, low levels of depression, and engagement in low levels of avoidant coping strategies. Some stressors were severe enough to precipitate disorders without regard to an individual's predispositions or vulnerabilities (van Heeringen, 2012). However, this association was generally a limitation in previous suicide research, and scholars recognized that in order for suicidal behavior to occur, there has to be a vulnerability (even if as an inherent factor) that prompted an individual to react with suicidal behaviors when experiencing stress (van Heeringen, 2012).

Although vulnerabilities are present in everyone in varying degrees, the concept of a continuous diathesis offers some explanation for the differences in suicidal behaviors in each person (i.e., why individuals differ in their suicidal reaction to similar life events; van Heeringen, 2012). Although a person may experience enhanced coping skills as he or she tries to manage stress, recurrent experiences of stress may progressively weaken an individual's resilience toward stress (Rada & Johnson-Leong, 2004; van Heeringen, 2012). After repeated similar experiences, a person will tend to default to a standard

coping method, which also offers some explanation as to how smaller stressful events can then snowball to suicidal behaviors and intents (van Heeringen, 2012).

Background Information

Suicide researchers have presented many perspectives as to why suicide occurs, but there is no research that offered a definitive explanation on why it happens (Jalles & Andresen, 2014; O'Connor et al., 2014). Suicide remains a global phenomenon in every region of the world that presents a health crisis for the public health sector (WHO, 2018). Although suicide is preventable, often with the use of low-cost, evidence-based practices, the key is to have comprehensive, multisectoral primary prevention strategies in place as early as possible (WHO, 2018). Only about one-third of people who think about suicide will attempt it, and that transition from thoughts to action occurs typically within a year of the initial onset of ideation (O'Connor & Knock, 2014). Suicidal behavior is associated with a sense of isolation and in those who experience abuse, violence, disaster, loss, and conflict; there is also an association between high rate of suicide and access to means to commit suicide (WHO, 2018).

The topic of suicide needs to be separated from the idea of assisted death/suicide. The research on the topic of physician- and family-assisted suicide has been an issue for national and international debate, and its social acceptance is increasing (Frey & Hans, 2016). There are still some countries (Australia, Canada, Hungary, Italy, New Zealand, Norway, and the United Kingdom) in which it is illegal, but some countries (Belgium, the Netherlands, the United States, and Switzerland) have created legal steps to ensure that this is an option for terminally-ill patients (Frey & Hans, 2016). This topic is an

important issue for context in the topic of suicide because within its core lies the belief that all individuals should be able to determine the circumstances of their death, without interference from others (Frey & Hans, 2016). The presence of chronic and extreme pain or illness makes this action acceptable (Frey & Hans, 2016), but suicide is still a taboo topic with a stigma attached to it. It is imperative that research is conducted to improve the public and scholarly understanding of suicide not only to reduce its rate of occurrence, but to develop appropriate interventions.

Statistics on Suicide

The WHO (2018) estimated that approximately 800,000 deaths occurred annually due to suicide. For each of those deaths there were an estimated dozen suicide attempts made (CDC, 2018). Since 2008, suicide has been ranked the 10th leading cause of death for all age groups in the United States; in 2016, it became the second leading cause of death for those aged 10 to 34 and the fourth leading cause for those aged 35 to 54 (CDC, 2018). Suicide rates tend to run higher in marginalized populations, such as refugees and migrants, indigenous peoples, lesbian, gay, bisexual, transgendered, queer, intersex, and asexual (LGBTQIA) persons, prisoners, and those who may experience other types of discrimination; however, the highest risk factor for suicide is a previous attempt (WHO, 2018). The CDC (2018) identified suicide deaths by use of the *International Classification of Diseases*, 10th Revision (ICD-10), and the underlying cause of death showed a continuous and steady increase of suicide rates in the United States.

The CDC (2018) reported that over a 16-year period from 2000 to 2016, the rate of suicide increased by 30% from 10.4 to 13.5 per 100,000. There was an annual average

increase of suicide of 1% from 2000 to 2006 and to 2% from 2006 to 2016 within the age group of 10 (females) and 15 (males) to 74 years of age (CDC, 2018). For females, there was a 50% increase from 2000 to 2016, thus narrowing the male to female ratio from 4.4% to 3.6; the highest rates for females fell in the age range of 45 to 64 in 2000 and 2016 (CDC, 2018). For males, the highest suicide rates were among those aged 75 and over in 2000 and 2016, although those in 2016 were lower than those occurring in 2000; the overall rate was significantly higher in 2016 as compared to 2000 for males aged 15-24 (CDC, 2018). The leading causes of death in both males and females as identified by the CDC from 2000 to 2016, the ICD-10 classification of self-injurious methods of morbidity and mortality, and the NVSS age-adjusted rates for suicide in both males and females respectively.

Although the WHO (2018) has presented similar statistical suicide data in numerous publications, there is room for improvement in the overall collection and analysis of suicide data. There has been empirical support of the limitations encountered in the attempt to classify, identify, and report suicide death and data (Bakst, Braun, Zucker, Amitai, & Shohat, 2016). These limitations exist on all levels from the medical, legal, and social levels, and they impact various research fields and the way that empirical exploration of suicidology is conducted. Additionally, cultural, religious, financial, or legal considerations (e.g., family or community stigma, low autopsy rates, nonpayment of policies by life insurance companies) in addition to the vagueness of suicide deaths has contributed to the misrepresentation of suicide data (Bakst et al., 2016). There may also be some correlation between the method of suicide and

underreporting as those methods that are more violent (e.g., gun shot or hanging) versus those methods of suicide that are less active (e.g., poisoning, drowning, or death of the elderly) that make suicide more difficult to determine (Bakst et al., 2016). Because of these limitations, it is imperative to include mortality data from categories identified as undetermined injury, ill-defined conditions, and unknown causes in the examination of suicide data for research purposes (Bakst et al., 2016). Some countries use more thorough investigations and do not rely on the death certificates; as a result, their data are considered more reliable (Bakst et al., 2016). In Denmark cases of sudden death must be confirmed through mandatory policy investigation and medico-legal examinations before the death certificate is issued; some countries, such as Israel, have no systematic methods for cause of death determinations if criminality is not proven (Bakst et al., 2016).

Warning Signs of Suicide

Suicide ideation is not uncommon, although most people who do think about suicide do not go on to attempt it (May & Klonsky, 2016). There seem to be clear stages that precede suicide that begin in suicide ideation identified in the literature (Lee, Jeon, & Park, 2019). Although almost 14% of people have reported thinking about suicide, only close to 5% actually attempt it; this is also similar in clinical populations (May & Klonsky, 2016). It is necessary to determine what risk factors distinguish those who think of suicide and those who actually go through with it (May & Klonsky, 2016). There are theories on suicide that provide quantifiable hypotheses to illuminate which variables categorize ideation versus attempts; however, most of the existing literature on suicide is not structured in a manner to examine that distinction (May & Klonsky, 2016).

May and Klonsky (2016) searched for studies on those individuals who had a history of suicide ideation and those with a history of nonfatal suicide attempts to determine the extent to which each factor distinguished attempters from ideators. May and Klonsky noted that most literature that discusses potential risk factors only compare suicide ideators and attempters to nonsuicidal individuals, but never to each other. Suicide ideation did not necessarily result in suicide, but an individual's attitude towards suicide may precede ideation (Lee et al., 2019). There is a significant association in approving and permissive attitudes towards suicide and suicide ideation (Lee et al., 2019). May and Klonsky found that although previous research on suicidality offered hundreds of correlates, most contribute little to determine who will only think about suicide verses who will actually attempt it, but anxiety disorders overall were more common to suicide attempters.

One difficulty in the study of suicide research is that it cannot be reduced to a single cause; there are hundreds of confirmed suicide-specific risk factors (Tucker et al., 2015). To date there is no empirical explanation that can predict suicide, so much so that the *DSM 5* presented the validity and reliability of suicidal behaviors as a separate diagnostic category (Irigoyen et al., 2019). There are numerous scholars who have validated that, although not exclusive, the most stable predictor of suicide is a history of previous attempts (Bostwick, Pabbati, Geske, & McKean, 2016; Finkelstein et al., 2015; Irigoyen et al., 2019; Joiner et al., 2005; Lewis, Meehan, Cain, & Wong, 2015; McLean, Maxwell, Platt, Harris, & Jepson, 2008; Miranda et al., 2008; Monnin et al., 2012). There are some risk factors that are linked to suicide ideation, but there is no way to

differentiate among those who are thinking about it and those who have or have not actually attempted suicide (Lee et al., 2019; Tucker et al., 2015). There was a suggestion to look at the factors that directly influence suicide, such as explicit thoughts, feelings, and behaviors that may be viewed as warning signs (Tucker et al., 2015). The research shows the importance of research focused on determining the extent in which the life events, illnesses, and psychosocial occurrences add to the suicidality of an individual (Tucker et al., 2015). These life events, which may not necessarily lead to the suicidal crises, comprise an essential point of reference for individual suicide behaviors (Tucker et al., 2015). Further research is needed to determine if drivers are valid and reliable, but the use of empirical data can be used to detect the drivers to link them to the most effective suicide interventions (Tucker et al., 2015)

The majority of people who committed suicide communicated that attempt in some way. One study explored the warnings of suicide there were present 1 year, 1 month, and 1 week prior to the suicide in individuals to determine if there were opportunities to intervene (Ramchand, Franklin, Thornton, Deland, & Rouse, 2017). There is not much known about the way these communications were interpreted by others (Owen et al., 2012). This may be explained by the research that showed that no new behaviors or signs were present the 7 days prior to the suicide (Ramchand et al., 2017). In a study on the psychological autopsies of 14 individuals who committed suicide from 2008 to 2009, Owen et al. (2012) found that some 25 to 30% of the deceased explicitly communicated their suicidal intent to others around them in their final months, and between 60 and 80% indirectly (verbal and nonverbal) communicated their suicidal

intents. Ramchand et al. (2017) also reported that the expression of suicide warning signs varied, but 29% of decedents left a note and 11% rehearsed their suicide. The communications for suicide are frequently repeated to more than one person but are often communicated in different forms (Owen et al., 2012). Although parents and friends are more likely to observe behaviors and signs preceding the suicide, those factors that were reported following the suicide event were not the same (Ramchand et al., 2017). Indirectness, which is a universal phenomenon that takes place when there is incongruence in the expressed and implied meanings, requires the listener to infer what the messenger really means (Owen et al., 2012). The listener has to be able to understand what is meant using hints, insinuations, irony, metaphors, and illocutionary acts, which can be difficult depending on a number of factors such as context, quality of accompanying context, and degree of indirectness (Owen et al., 2012). There is a higher chance of misinterpretation and the demand of more effort from the listener to understand (Owen et al., 2012). There is generally some indication that a person intends to commit suicide before he or she actually attempts it.

The study of suicide causation (underlying) and prevention is complicated as compared to other causes of death, particularly because suicide is a psychological occurrence as compared to death by accident or illness (Lewis et al., 2015). Trying to determine why someone took his or her life is a more subtle and philosophically intricate task. Despite the theoretical and empirical literature, relatively little advancement has been made in understanding the fundamental mechanisms and origins of suicidal behaviors (Lewis et al., 2015). Although there is research that has attempted to identify

suicide causation through the identification of drivers and warning signs, there has been limited clinical applicability of the findings (Tucker et al., 2015). The limitations of research focused on determining suicide risk factors pointed towards individual patient-specific warning signs that were indirect, and thus have been omitted in the endorsement of leading to suicide (Tucker et al., 2015).

These indirect factors should not be overlooked as they can provide context and highlight the need for research of patient-specific factors (Tucker et al., 2015). This reinforced the need for advocacy that supported research that used a personality-based model of suicide behavior using the two-polarities model of personality (Lewis et al., 2015). Lewis et al. (2015) conducted a review of a clinical viewpoints on suicide and personality function, comprising theoretical and empirical models to detect associations between the aspects of personality function and proneness to suicidal behavior. The more current theories in suicide research provided perspectives that have been able to identify models of self-destructive behaviors (Lewis et al., 2015). There is now more focus on the connections between triggering stressors that lead to suicide and the distinct personality-based processes in theories on suicide; however, there are limitations due to those theories' underlying assumptions that every individual who is suicidal experiences similar susceptibilities to the same types of psychological traumas (Lewis et al., 2015). Lewis et al. argued the need for alternate personality-based approaches to suicide research that considers risk factors within a more wide-range which consider models of personality. This would encompass the review of personality-based cognitive and affective processes, concentrating on primary motivating psychological needs, attentional

partialities, and capabilities for impulse regulation (Lewis et al., 2015). This approach to push the incorporation of current personality theory with new and emerging methodologies to suicide research will provide a comprehensive understanding of suicidal behavior in individuals, as well as greater accuracy in prediction of risk at the clinical assessment level.

Suicidal behaviors are the result of varying interactions among a multitude of factors; although, the way these factors interact with one another is also not clear (O'Connor & Knock, 2014). Jalles and Andresen (2014) argued that there had to be a minimum level of happiness (at present and in the future) necessary for individuals to willingly continue to live. More specific identifiers of suicide risk need to be identified so that interventions can be targeted to those factors to decrease the likelihood of a suicide attempt by an individual (O'Connor & Knock, 2014). There has been an inadequate response to suicide prevention due to a lack of awareness of suicide as a public health issue and the hesitation of many societies to address it openly (WHO, 2018). The WHO (2018) noted that, due to the complexity of suicide prevention, no single approach will be able to impact its occurrence. Instead, the WHO believed that efforts geared towards prevention will require a comprehensive collaboration among multiple sectors, including education, labor, agriculture, business, law, politics, and the media.

Although some may believe that an individual's religion or religious beliefs are often a protective factor against suicidal thoughts and behaviors, the empirical data from research on this topic are inconsistent (Lawrence, Oquendo, & Stanley, 2016). The

relationship between religion and suicide have been researched since Durkheim's finding were presented in 1897, but not much more is known at present to substantiate religion's role in suicide (Barranco, 2016). One reason offered for the lack of inconsistency in research may be due to the complexity of both constructs (suicide and religion), and the associated dimensions, in religion-affiliation, participation and doctrine, in suicide-ideation, and attempt and completion (Lawrence et al., 2016). Religious groups have varying denominational views of suicide, some fully condemning it, others offering more acceptance of the freedom of individual thought (Barranco, 2016). Active membership and participation in religious services and practices may protect an individual from actually carrying out suicide attempts but not ideation (Lawrence et al., 2016). Although there was no obvious protection from suicidal thoughts, the attempts and severity of attempts was shown to be protected resulting from an individual's religiosity (Lawrence et al., 2016).

Recent research has shown that beyond the impact of bereavement, exposure to suicide of a family member increases risk for suicide (Cerel et al., 2019). Although researchers have found clear risk factors for suicide in individuals who have been around others who have attempted or committed suicide there is little evidence to support that the individuals have to be related for this exposure to increase their risk (Cerel et al., 2019), children who have been exposed to parental suicidal behaviors or actions are four times more likely to attempt suicide in their lifetime than those with no exposure (Lunde, Reigstad, Moe, & Grimholt, 2018). Lunde et al. (2018) acknowledged that although there is some correlation between suicide and environmental factors, there are also some

biological factors that may be passed from parent to child, which may include hopelessness, neuroticism, and extroversion. Lunde et al. discovered no real interventional studies were available to address the risk factor of parental suicidal behavior as a precursor to adverse outcomes in children. This may be a subject for later research to validate the need for more primary interventions.

Occupations and Suicide

For many decades, there have been studies on the correlation between suicide and societal conditions. There are connections to marital status, substance abuse, and employment status and suicide (Jalles & Andresen, 2014). Stress resulting from financial circumstances and working roles, particularly when access to those roles are negatively impacted by economic crisis, leads to an increase in suicide risk (Jalles & Andresen, 2014). There has been debate on the impact of the economic crash of 2008 and increased suicide rates; as a result, unemployment was the focus of a majority of the studies assessing the impact of the 2008 economic crisis on suicide (Laanani, Ghosn, Jougla, & Rey, 2015). As unemployment rises, suicide rates do as well (Laanani et al., 2015). Unemployment is a critical factor for suicide (with reported variations according to occupational groups); there have been some occupations with consistent high rates of suicide, and healthcare providers are one of those groups (Klingelschmidt et al., 2018).

Determining the influence an occupation has on suicide risk is complex due to work (e.g., instability) and nonwork (e.g., domestic conflict) factors that may contribute to the psychological anguish of an individual. Suicide risk has been shown to be elevated in some occupational groups; however, the long-term occupational impact related to

suicide rates is not well known (Azevedo et al., 2019). Peterson et al. (2018) stated that there may be some confusion on the association between suicide and a particular occupation due to ease of access to lethal means that may be due to the type of occupation and socioeconomic factors. Earlier research on occupation and suicide have arrived at differing conclusions, which may be due to the varying methodological approaches; thus, is it not atypical to see a certain occupational group reported higher in one study and not in another (Peterson et al., 2018). One suggestion on rates of suicide in occupational group from Azevedo et al., (2019) pointed to higher rates in low-grade occupational groups, which while not found to be statistically significant, is explained by the presence of unfavorable work conditions. However, it is critical to conduct more research on suicide to develop and initiate preventions; work is an underused location for suicide prevention (Peterson et al., 2018). The establishment of personalized prevention strategies may be necessary to support an occupation that may be identified as having higher risk for suicide (Peterson et al., 2018).

There is an elevated rate of suicide ideation and death among certain groups of health care professionals, and dentists are in that group (Milner et al., 2016). The increased risk of suicide for medical practitioners as an occupational cohort group is thought to be the result of working in high-stress occupations, the possession of certain personality traits, the general characteristics present in medical culture, the ease of access to lethal means, and chronic exposure to illness (Pilgrim, Dorward, & Drummer, 2017). Although medical professionals have a duty to report, colleague impairment is difficult to

detect often because one of the first signs of an issue may be criminal charges, medical malpractice, drug overdose, suicide attempts, or death (Pilgrim et al., 2017).

In Australia, in a 12-year study conducted on the recorded suicide deaths of employed adults aged 20-70, Milner et al. (2016) found that health care professionals accounted for 3.8% of the total number of suicides. Initiatives geared towards suicide prevention should focus on factors in the workplace (including methods used to commit the act) that may influence a person's risk of suicide ideation and attempt (Milner et al., 2016). However, people with occupational access to lethal means tend to use them to commit suicide. Females had about a 3.02 times higher rate of suicide compared to males who had a 1.24 times higher rate of suicide than as compared to those individuals who did not have access to lethal means (Milner, Witt, Maheen, & LaMontagne, 2017). This may account for a certain occupational group's variations in their reported rates as an occupational group (Peterson et al., 2018).

There may be a misconception that being employed protects a person from suicide; this misperception may be due to suicide rates being two to three times higher in those with unstable employment and almost four times higher in the long-term unemployed (Younes et al., 2018). However, suicide rates for employed people are higher than among the number of unemployed suicide deaths, and there are some occupations that are at a higher risk for suicide: This includes health professionals (Klingelschmidt et al., 2018; Milner, Spittal, Pirkis, & LaMontagne, 2013; Milner et al., 2016; Stanley, Hom, & Joiner, 2016). One explanation for the elevation of risk in specific occupational groups could be tied to the ease of access to lethal means, larger

socioeconomic influences, work-related factors, and stressful working conditions (Milner et al., 2013).

Younes et al. (2018) explored the relationship between multiple aspects of work organization and suicidal ideation using a sample of 2,027 working patients who were patients at a general practice from April to August of 2014. Younes et al. found that 8% of the participants reported suicidal ideation in the prior month, and there was a significant association between work intensity and suicidality for males and work-related emotional demands in females. Current occupational research into suicide focuses on the psychosocial factors like role factors, working time and intensity, emotional demands, social support, and fairness (Younes et al., 2018). Niedhammer, Malard, and Chastang (2015) found that although all psychosocial occupational factors were accounted for concurrently, factors such as low reward and job insecurity were predictive of major depressive disorders while emotional demands and job insecurity were predictive of generalized anxiety disorders.

There is a need for the inclusion of more open-ended, abstract perceptions identified by qualitative methods in suicide research as these factors may not have had a way to be identified in earlier suicide studies. There is a need to identify and explore more psychological and social work-related factors that differ from suicide predictive factors that have been traditionally studied (Finne, Christensen, & Knardahl, 2014). Because most working individuals spend so much time at work, it is considered to be a vital source of validation and central to a person's personal identity; thus, working conditions have the potential to influence a person's self-esteem and identity (Finne et al.,

2014). Suicide ideation can be influenced by mental health in the form of mood and anxiety disorders, which can be impacted by things that happen at work (Shin, Lee, Seol, & Lim, 2017). Finne et al. (2014) examined 19 psychological and social work factors as predictors of potential clinically significant mental distress, specifically anxiety and depression, and found that the single most constant risk factor for predicting mental distress was role conflict, and the most constant protective factors were support from immediate supervisor, fair leadership, and positive challenge. Although there is an assumption that having a job endorses good health, the net effect on an individual's mental health is reliant on the psychosocial quality of the work environment (Finne et al., 2014).

Stress and Suicide in Dentistry/Dental School

Certain occupational groups deal with more stress as a byproduct and nature of the job they perform. Medical professionals have been identified as having an elevated risk for suicide as compared to the general population (Milner et al., 2013). The target for this research was to look at dentists, who are subjected to many stress-related physical and emotional issues ranging from management of anxious children, difficult adults, personal insult (being regarded as incompetent, peer comparison), and being seen as inferior to other types of doctors (Naidoo, 2015). Stress, depression, and burnout among dentists has been researched over a number of decades and from many academic and occupational points of view. The number of issues a dentist may face upon entering practice range from financial, workplace, practice management, and social issues, which they may not be prepared to handle (Rada & Johnson-Leong, 2004). Stressors that may

typically be seen as positive that stimulate or challenge an individual can result in debilitating a person when occurring too rapidly or unrealistically (Rada & Johnson-Leong, 2004). Although a person may want to set high goals, it is often the way that a person may choose to go about achieving the goals that may cause the problems and negative outcomes (Rada & Johnson-Leong, 2004). Ahola and Hanken (2007) showed a reciprocal relationship between burnout and depressive symptoms, which validates the position that job strain predisposes dentists to depression by way of burnout.

Burnout is a byproduct of emotional exhaustion, and it impacts a dentist both personally and professionally, resulting in lowered quality of work (Bolbolian, Keshavarz, Sefidi, & Mir, 2018). Bolbolian et al. (2018) found that although most of the dentists worked in a private practice (59.2%) and a little more than half (52.4%) worked morning and afternoons, 46.6% reported only working 21 to 30 hours a week, 11.7% reported working 40 or more hours weekly, and the majority (64.1%) of dentists only saw six to 10 patients per day. Bolbolian et al. showed that 14% of the dentists fell into the range of severe emotional exhaustion, and 15.5% were severely depersonalized; yet, there was no significant correlation in the gender and level of burnout, but all the participants had high job efficiency burnout. Although there was no significant relationship between burnout and the work location, shift, or number of patients treated, the highest level of burnout was reported in those dentists who worked 21 to 30 hours per week (Bolbolian et al., 2018). Huri, Bagis, Eren, Umaroglu, and Orhan (2016) showed that 29% of dentists had signs of burnout, 38% showed increased emotional exhaustion, and 22.2% had depressive symptoms. There was a 38% increase in emotional exhaustion, and

depersonalization increased by 22%, while personal accomplishment decreased by 12% (Huri et al., 2016). Female dentists tended to be more emotionally exhausted, and male dentists tended to be more depersonalized; overall, the dentists aged 36-45 years of age were the highest of the emotionally exhausted, and the 46-55 were the most depersonalized (Huri et al., 2016). The public sector dentists tended to be the most burned out and emotionally exhausted (Huri et al., 2016). Huri et al. also noted that although there was no real statistical significance in the hours worked, there was a positive correlation in the number of patients seen and the increase of emotional exhaustion and depersonalization. There is a link between burnout and deficiencies in cognitive control and executive level functioning that can have effects that persist well beyond the point of recovery (Chipchase, Chapman, & Bretherton, 2015).

Although there is evidence to show that dentists have profession-related stress factors, academic stress is also a significant positive predictor for students as young as 13 (Masood, Kamran, Qaiser, & Ashraf, 2018), which may suggest that the discussion of occupation stress in the dental occupation should begin in their journey in acquiring professional-level training in dental school. An individual who is in preparation to participate in the medical profession is exposed to stress factors (Rosiek et al., 2016). These stressors are present at the beginning of their education in the form of the interview, then in the exams, trainings, and internships required to complete the program (Rada & Johnson-Leong, 2004; Rosiek el al., 2016). In addition, dental students are involved in the diagnosing and treatment of patients. Rosiek et al. (2016) asserted that a medical/dental's educational progression is marked by the presence of perpetual stress,

which she/he must overcome, noting that not all students are able to cope with this pressure. Negative life events in this context can compound dental students' risk of depression and suicidal thinking (Rosiek et al., 2016).

Coping plays a role in adaptation to stressful life events. Because of the broad scope of stress and the various ways to handle it, Rosiek et al. (2016) analyzed stress and anxiety and the influence they have on suicidal thinking in medical students from the largest medical school and found that stress for about half of the participants was viewed as an emotional state; 42% felt that stress was a psychological reaction of the body, and 7% felt stress was a stimulus; although 61% of participants claimed to get upset quickly, only 23% felt they were not susceptible to stress (Rosiek et al., 2016). Coping with stress improved as the students' educational journey progressed, but chronic stress impacted their mental health and suicidal thinking (Rosiek et al., 2016).

There are also studies on the level of stress and anxiety experienced while completing the dental curriculum in various programs of study nationally (Al-Sowygh, 2013; Alzahem, Van der Molen, & De Boer, 2013). Bathla, Singh, Kulhara, Chandna, and Aneja (2015) examined the stress levels among dental students in a cross-sectional study and found statistically significant results reported in academic areas (high workload, competition/fear of failure) and nonacademic areas (lack of interest in the profession), with the highest stress coming from first and final year students. There have been recommendations made for the modification of the teaching methodologies and curriculum, allowing earlier and more gradual integration of patient care, increasing interpersonal relationships between faculty and students, and introducing stress

management and [implementation] of various coping strategies to help students manage stress while in dental school (Alsahem et al.,; Bathla et al, 2015).

Srinivas (2015) highlighted the increasing number of students committing suicide in dental institutions in India. One reason offered for this increase is there is no mental assessment of prospective students during the interview process (Srinivas, 2015). An additional explanation is that dental school faculty are clinicians or researchers, but are not trained how to teach, and they have no understanding of educational methodologies (Faizuddin, 2012). Although competition to recruit dental student has increased, the employment opportunities for new graduates has not increased, and dentistry is no longer the preferred course for students as an option after preuniversity completion (Srinivas, 2015). While acknowledging the complexity, demanding, and stressful components of the dental education and career, the mentorship of students is a benefit to students in dental programs (Srinivas, 2015). Students reported receiving more beneficial feedback from those instructors who implemented varying assessment methods to deliver learning outcomes (Alquraan, Bsharah, Al-Bustanji, 2010).

Dental students also enter the work field with massive student loan debt, and they may find themselves working for many years with only the hope of “breaking even” (O’Reilly & Jacobs, 2015). In spite of the benefits of having a balanced lifestyle and job stability that are said to come with becoming a dentist (Nielson, 2020), a 2015, online poll by the General Dentist Practice United Kingdom (GDPUK) asked current dentists if they would still choose a dental degree now (O’Reilly & Jacobs, 2015). Of the 148 respondents, 67% stated that they would no longer consider a career in dentistry if they

had to start all over, and only 18% would even consider a career in general practice dentistry (O'Reilly & Jacobs, 2015). This may be due to the evolving, daily job changes that stem from new requirements and anticipated changes from the National Health Services (NHS), which will mark a difference in the dentistry workforce over the next few years (O'Reilly & Jacobs, 2015). There are some undesirable outcomes of dentistry that also serve to explain why there is now some reluctance for dentistry as an occupation; these outcomes range from time needed for school to debt, stress, physical demands of the job, and lack of benefits (Nielson, 2020). O'Reilly and Jacobs (2015) suggested having this information of anticipated changes and current dentists' perceptions relayed to potential dental school applicants so that they could choose if it was still a field of study this wished to pursue. Research has shown the need for changes in dental school curriculum, delivery, and screening, (Faizuddin, 2012); however, in spite of the research outcomes, there is reluctance to change or adopt new methods (Alquraan, 2012; Alquraan et al., 2010).

Dudau, Sfeatcu, Funieru, and Dumitrache (2015) also showed the high level of stress related to the professional and academic lives of dental students, which is noted as being filled with stress that can have consequences on their capability to function in emotional, physical, social, and professional settings. Research conducted to compare effective stress management in dental education reported that dental students have a 100% prevalence of stress (Alzahem, Van der Molen, Alaujan, & De Boer, 2014). This is due to the expectation of maintaining excellence and perfectionism as the standard in dental school (Alzahem et al., 2014). There is also the mention of grade competition,

heavy workload, difficulties in meeting procedural clinical requirements, inconsistent feedback from faculty, perceptions of receiving unjustified criticism on preclinical and clinical exercises, tense relationships with faculty members, and student annoyance due to the absence of schooling advocacy or the lack of time for relaxation (Dudau et al., 2015). In a 5-year curriculum, the third year of dental school is considered the most stressful (Alsahem et al., 2014). However, individual characteristics like personality, emotional intelligence, and social support also play a part in the way that a person responds to stress, in addition to sociocultural, gender differences, and other factors that have also proven to be related to individual stress responses (Dudau et al., 2015). Dudau et al. showed that there was a positive correlation among depression, anxiety, and stress in almost all areas of irrational thinking, and the pressure to perform was significantly related to all symptoms, with the exception of depression. Dudau et al. concluded that the presence of irrational beliefs better explained professional stress compared to general stressors.

Aboalshamat et al. (2018) conducted a study on the correlation between suicidal ideation and attempts with loneliness and found that the obstacles that often await dental students ranged from large workloads, competitive environment, and academic issues. In an exploratory study to determine the perceived stress and satisfaction of dental students in France, students reported that the most stressful aspects were the number of clinical expectations and delayed feedback from instructors (Inquimbert, Tramini, Alsina, Valcarcel, & Giraudeau, 2017). Aboalshamat et al. also stated that suicidal ideation was nonexistent among the medical students in Saudi Arabia, which may have been due to a

reluctance to disclose feelings as it is prohibited in Islamic teachings. Aboalshamat et al. found that 37.7% of dental students had experienced suicidal ideation over their lifetime, 33.4% had experience it within the last 12 months, and 23.2% had actually attempted suicide. There was a significant correlation between suicidal ideation and students who reported having feelings of loneliness within the last year, and the highest reported risk for suicide ideation and attempts was among the participants categorized as female, married, low-income, and dental students (Aboalshamat et al., 2018). Research has shown a negative correlation between student satisfaction and perceived stress, which points to the dysfunction within the clinic education of dental programs (Inquimbert et al., 2017).

Moodley, Naidoo, and van Wyk (2018) suggested the need for stress management to be implemented into the dental education, due to the increase of stress that accompanies each successive year of education. The start of the educational process is the right time to establish the importance of a stress-free, healthy workplace. Moodley et al. found that 45% of the dental students showed signs of moderate stress, and 42% showed signs of severe stress, with almost 25% of the students wanting to quit or change their program and 3% reporting that they wanted to commit suicide. Chapman, Chipchase, and Bretherton (2015) asserted that dentists experienced occupational stressors associated with working as a dentist, and those stressors negatively impacted their professional and private lives. Stress has been identified as having a negative impact on a physician's clinical ability to make decisions, which can result in real-time implications for a patient's safety (Chapman et al., 2015). One issue in the identification

or designation of occupational stress is its subjective nature, which is dependent on the person who experiences and then interprets the event, and after repeated use, or evolutionary adaptation, can lead to the manifestations of phobias, disorders, depression, and stress reactions (Chapman et al., 2015). When the decision-making processes in an individual are not functioning optimally, there is a greater likelihood for undesirable outcomes, which are typically held with greater conviction and unwavering certainty; thus, a burned out worker will overestimate his or her abilities (Chipchase et al., 2015).

Popular Opinion and Public Perceptions

In addition to occupational stressors, there are more issues that impact a person's livelihood than the way he or she behaves while at work. The use of social media has increased benefits for patient care, but also creates situations that allow a health professional's fitness to practice being called into question in addition to creating risks for confidentiality breaches (Kenny & Johnson, 2016). The provider's thoughts, feelings, and beliefs can be electronically immortalized (Affleck & Macnish, 2016). Although a professional may turn to social media outlets to share thoughts and opinions, it is also seen as a revelation of hidden characteristics that may present an individual in a manner that leaves them open to harm (Affleck & Macnish, 2016).

In a study on the attitudes of dental students in regards to their professional behavior on social media to determine the extent to which social media was used and their exposure to unprofessional behaviors, Kenny and Johnson (2016) found that 98.71% of dental students used Facebook at least once per week and that a privacy setting was typically used in addition to their real name in the majority of the students. Females,

while more likely to post pictures from school events, were found discussing staff and interacting with patients online as unprofessional; males were more likely to report feeling as though the school overemphasized professionalism (Kenny & Johnson, 2016). All students acknowledged knowing the school's fitness to practice procedures and felt as if social medial behavior was not separate from dental school (Kenny & Johnson, 2016). The Dental Defense Union created an e-learning course to help dental professionals navigate the use of social media ethically while avoiding mistakes (*British Dental Journal*, 2018).

Professionals have to contend with popular opinion and being judged based on extracurricular activities that may not have any bearing on their abilities as a clinician. In a study on the content of Facebook pages of dental students, Holden (2017) found that a large number of dental students with questionable content on their pages. Although a person's private life should be separate from their professional, social media must be seen as an extension of a person's professional personal and not as an extension of their private life (Holden, 2017). Although there is varied perspective from faculty, staff, and students as to what distinguishes professional and unprofessional behaviors online, the doctors do not want their lives outside of the medical practice regulated by varying professional counsels (Kenny & Johnson, 2016). Most medical practitioners are held to a higher standard as per their code of ethics, but the public must also find balance and remember that people are human, and dentists should not be held to unrealistic expectations (Holden, 2017).

Bereavement

Attitudes surrounding death and dying have evolved over the centuries, but a change in those attitudes has been traced back to the end of the 19th century and the first half of the 20th century (Chapple, Ziebland, & Hawton, 2015). During earlier periods in history, a death impacted the community as a whole, but as civilizations evolved, death became a medical and private issue because people died in hospitals as opposed to their homes (Chapple et al., 2015). In the1960s, psychologists, sociologists, and psychiatrists defied the norm and began an open discussion on death and grief; in the 1980s, talk of assisted dying emerged (Chapple et al., 2015). However, in terms of suicide as the method of death, there is still much that is unknown about why suicides occur, and there is a stigma associated with the language surrounding suicide. In contrast to what may be expected, a loss by a traumatic method can have detrimental effects on the surviving family and friends due to the stigma, complexity, and inability to be relatable as compared to other forms of death (Kheibari, Cerel, & Sanford, 2018).

Shneidman (1977), who founded of the American Association of Suicide, posited that for every person who dies by suicide, there are six survivors whose lives are forever impacted by that loss; this is thought to be an underestimate in light of more recent research which points to upwards of 130 survivors (Cerel et al., 2019; Kolves et al., 2019). Feigelman, Cerel, McIntosh, Brent, and Gutin (2018) evaluated the scope of lifetime suicide exposures in the population at large and concluded that 51% of the participants had at least one suicide exposure in their lifetime, and 28% had two or more suicide exposures; of that same participant group, 40% reported those suicide victims

being friends; 42% were remote relatives, and first-degree relatives (children, spouse, parents, siblings) accounted for less than 10% of their deaths (Feigelman et al., 2018).

Although some aspects of grief are universal (sorrow and shock), the bereavement of a loss due to suicide in contrast to other types of loss can be more traumatic due to the typically unexpected and violent nature of the individual's death (Groff, Ruzek, Bongar, & Cordova, 2016; Kolves et al., 2019). Those individuals who are dealing with bereavement as a result of someone who has committed suicide have to deal with social constraints that accompany the stigma of suicide, others' awkwardness, and advice and discomfort that may create obstacles to their ability to process their grief (Groff et al., 2016). There are situations in suicide grief and mourning that may be associated with the presence of greater distress, such as finding the deceased's body (Groff et al., 2016). In a study of evaluating the extent, type, and correlates of social constraints in a sample of 33 individuals who were recently bereaved by suicide and were seeking treatment, Groff et al. (2016) hypothesized that social constraints, depression, and posttraumatic stress would be elevated in those who lost and immediate family member and found the body. Groff et al. revealed that although suicide-bereaved individuals may suppress their own reactions to reduce the discomfort of others, there was no relationship in terms of the closeness of kinship or the degree of exposure (finding the body) to posttraumatic stress or social constraints, and those who lost an immediate family member reported lower depression.

Chapple et al. (2015) also claimed that special deaths (traumatic deaths resulting from suicide, murder, or illicit drug use) leave the bereaved feeling insecure and

stigmatized. Family members who have suffered the loss of a loved one due to suicide experience shame and self-blame, which can prohibit their ability to process their grief (Hagström, 2020). This is due largely to the variation of reactions they experience from relatives' and friends' assessment of the event that led to death (Chapple et al., 2015). Some of the reactions make it difficult for those mourning the loss; they become reluctant to talk about what happened, or the avenues in which they can share their feelings are limited (Chapple et al., 2015). Chapple et al. explained that the avoidance of the topic of death is known as "death taboo" and explored that concept in the context of sudden traumatic death, such as in the case of suicide. Chapple et al. asserted that views on death differ dependent on whether the death is considered a "private trouble" or a "public issue." Chapple et al. found that those individuals who grieved due to a traumatic instance (excluding terrorism and train crashes) felt as though they had to be cognizant of their reactions. Chapple et al. concluded that when a death is associated with a strong reaction from the public, or a sense of guilt, shame, or responsibility, the mourners are presented with the added burden of the response of others concerning their loss. The feeling of personal blame or being seen as having a dysfunctional family as the cause for suicide, can lead the bereaved to feel entrapped by the stigma of other's perceptions (Hagström, 2020).

The idea of not being able to grieve and mourn publicly seems unfathomable as death is something that is experienced universally; however, the act of suicide is not fully understood and is not typically expected or explained, which can leave those bereaved by loss due to suicide experiencing complicated grief (Kheibari et al., 2018). Those

bereaved by loss due to suicide are stigmatized based on to their association with someone who has committed suicide; subsequently, they have an elevated risk for later committing suicide themselves and may commonly experience blame for the suicide (Kheibari et al., 2018). This is shown to be further complicated in the relationship between the decedent and the bereaved; parents who lose a child may be viewed differently from someone who has lost a spouse (Hamdan, Berkman, Lavi, Levy, & Brent, 2020). Kheibari et al. (2018) assessed college student attitudes towards those who experienced loss due to suicide and those who had loss by other means and found that the cause of death did not predict indication of suicide ideation. Research on bereavement after sudden death described the risk of depression, complicated grief, and posttraumatic stress disorder as being related to the loss of social support and social isolation as a result of sudden bereavement (Hamdan et al., 2020).

Pittman, Osborn, Rantell, and King (2016) focused on the perception of stigma as reported by those who were bereaved by suicide loss as compared to other sudden deaths if they were related to the decedent or not. Pittman et al. found that those who were bereaved by a suicide loss reported higher perceived stigma than those reporting other types of sudden death. The most common feelings experienced by suicide survivors was shame, guilt, anger, and rejection (Berardelli et al., 2020). Feeling responsible for that death was not shown to be associated with those feelings or the closeness of the decedent (Pittman et al., 2016). However, the relation to the decedent does appear to impact the grief process (Hamdan et al, 2020).

The major criteria for suicide bereavement research is the perceived negative impact resulting from that death, and most respondents report some level of emotional distress (Feigelman et al., 2018). Knowing someone who has committed suicide is different from being impacted negatively by that person's suicide (Feigelman et al., 2018). A flaw identified in the research of those bereaved by suicide is the tendency to only focus on persons who have experienced a loss within a set period of time (i.e., within the last year). Suicide grief exists on a continuum as a long-term process and should be studied over the survivor's lifetime (Cerel, McIntosh, Neimeyer, Maple, & Marshall, 2014; Feigelman et al., 2018). Although there have been scholars who have tried to account for previous research design limitations and omissions, a number of those findings were obtained from clinical or not fully representational sample sets (Feigelman et al., 2018). It is important to note that similar feelings have been reported by those individuals who have actually survived a suicide.

Summary and Conclusions

There are many factors that are connected to a suicide occurrence; there is no single reason why an individual decides to take his or her life (Jalles & Andresen, 2014; Joiner, 2005; Kral, Links, & Bergmans, 2012; O'Connor et al., 2014; Van Orden et al., 2012). One theory for suicide is Joiner's (2005) interpersonal theory, which states that the desire for suicide is caused by the simultaneous presence of thwarted belongingness and perceived burdensomeness, resulting in the acquired capability to commit suicide. Life's stressors, combined with other elements, contribute to an individual's decision to commit suicide (Kirtley, Crane, & Rodham, 2019). One major source of stress is tied to

occupation. Dentists encounter high levels of stress that starts from their emergence into the dental field as students and continues on into their clinical practice (Prasad et al., 2017). Stress can take a toll on an individual and have negative impacts on his or her overall mental health, decision-making abilities, and daily life functioning (Prasad et al., 2017).

Although there are many issues in the data collection and report of the amount of suicide that takes place, it is globally recognized that suicide is a health epidemic (CDC, 2018; WHO, 2018). The use of those bereaved by suicide in research focused on suicide as proven to be useful in the postvention study of suicide (Andriessen, Chrysinska, Draper, Dudley, & Mitchell, 2018), particularly when trying to determine warnings and precursors that may be identified to reduce future suicide. Each study and empirical review increases understanding and identifies new things that will impact the phenomenon overall. Qualitative methodologies to suicide research are emerging (Troya, 2018). Various methodologists and key theorists support more suicide research that considers the human perspective that is generally not associated with quantitative methods of research (Hjelmeland & Knizek, 2010). The subjective nature of suicide makes it an ideal field of study to be explored with any of the number of qualitative approaches (Jobes et al., 2004; Troya, 2018). In this study, I incorporated a generic qualitative method to explore suicide.

Chapter 3 details the rationale for the design of this study, the role of the researcher, participant selection, and data collection and analysis for this study, and will end with addressing how trustworthiness for the study

Chapter 3: Research Method

Introduction

The purpose of this study was to expand the understanding of how stress influenced suicide in dentists, as perceived by family members. I examined occupational or other stress as a precursor to suicide as perceived by family members of the deceased dentists. Previously presented research addressed a similar topic but with significant methodological concerns. In this chapter, I discussed the methodology for the current study, including the rationale for the design and the role of the researcher, a description of the sample, and a description of the data collection and analysis plans. Additionally, issues of trustworthiness are addressed as well ethical considerations.

Research Design and Rationale

This study was guided by a single essential question:

How was occupational stress perceived by family members as a precursor experience for dentists who have committed suicide?

The central concept for this study was that occupational stress was a precursor to the commission of the suicide. Information about this central concept was derived from the perceptions of the family member of the decedents. For the design of this study, I explored previous suicide research to determine the most appropriate methodology for my study. Grant (2012) stated that evidence-based information can be used to inform practice and generate new evidence. Taylor, Bogdan, and DeVault (2015) defined research personal assumptions as the factors that shape the selection of a methodology. Therefore, I focused on the perceptions of stress in others.

Blair, Cooper, Coppock, and Humphreys (2019) explained that there are four components to a research design: the theory, the research question, the data, and the approach to using the data. The optimal way for me to determine which methodological design was most appropriate for my study began to unfold as I focused on what I wanted to discover. In the early stages of planning, it was clear that a quantitative method was not appropriate for this study. Quantitative methods focus on interactions between variables after they have been operationalized (Doucerain, Vargas, & Ryder, 2016). Quantitative research has historically been the dominant approach in the study of suicide, and in being so, there has been a loss of context and historically situated perspectives in many subfields in terms of researching a particular culture or phenomenon (Doucerain et al., 2016). In one research example, a quantitative study was done to assess the rates of suicide among a sampling of women, which was done to spotlight previous empirical reports of the gender-based nature of suicide (Mallon, Galway, Hughes, Rondon-Sulbaran, & Leavey, 2016). However, the use of a purely quantitative method obscured the qualitative experience (Doucerain et al., 2016) and omitted those aspects that may be specific to a population of participants (Mallon et al., 2016). This study was focused on the perceptions of a lived experience, which was more accurately assessed with a qualitative methodology.

I considered conducting a mixed-method approach in this study because of the joint benefits of using dual methodologies that would have provided a holistic view of a phenomenon. This would have allowed one methodological approach to enhance the other methodological approach, expanding on the study's conclusion (Schoonenboom &

Johnson, 2017). Vilaplana, Richard-Devantoy, Turecki, Jaafari, and Jollant (2015) used a mixed-method design to study suicide and the association between insight into mental disorders and suicidal behaviors. The methodology was selected based on the goals to establish the strength of and clarify the quantitative and qualitative relationship between insight and the risk of suicide (Vilaplana et al., 2015). However, I chose not to use a mixed-method approach for my study to ensure that I was not making the common researcher mistake identified by Doucerain et al. (2016), which is allowing the method to determine my research question. I determined that the purpose for the research was not based on any correlation of variables, or focused on any statistical analysis, which may have been appropriate if the overall goal was to determine general rates, so this was not a good fit for my study. Because the overall goal for the study was to gain an understanding of the way an experience is described and the meaning attributed to that experience, I used a qualitative method inquiry.

Basic Qualitative Design

The design of this study changed over the development of the proposal, and several qualitative approaches were at one point considered for this study. Initially, the design I chose for this study was grounded theory, which is intended for research that seeks to create or uncover a theory to explain some process or action in an area of inquiry (Chun Tie, Birks, & Francis, 2019; Glaser & Strauss, 1967). As a lay researcher, it seemed that the goal of my proposed research was to generate data for the purpose of expanding Joiner's (2005) interpersonal theory of suicide. However, the inappropriateness of this approach became evident as I began to seek justification for that

approach and realized I was not creating a theory but expanding the understanding of an existing theory. I also considered using the phenomenological approach, which describes the lived experience of multiple people in terms of a common understanding (Husserl, 1983). At an initial glance, this design seemed to be a good fit as the focus of the research was on the perceptions (lived experiences) of family members' bereaving loss by suicide (phenomenon). However, there were some components that did not fit that approach fully because the description of the direct experience of the dentist is based on the family member's observations. Finally, I considered a narrative approach, which seemed to fit because it is an approach which gathers data through stories which expresses a lived experience (Ricoeur, 1990). The dependence on the personal account of the survivor seemed to be ideal for the approach of telling a story, but the heart of narrative research lies in the ability of the individual to tell their own story from which the researcher then finds meaning (Butina, 2015), and that was not possible for this study.

In the development of the research question, goal, and purpose, I determined that there were some aspects of all the qualitative approaches that would be useful in this study, so I chose the generic, qualitative approach as the best methodology for the proposed study. This approach allowed for an amalgamation of key components from varying approaches, while not requiring adherence to a single approach (Edmonds & Kennedy, 2016). The generic, qualitative approach includes multiple qualitative approaches, which allowed for flexibility in the design and explanation of how my study would be structured. Percy, Kostere, and Kostere (2015) stated that the generic, qualitative approach centers on the subjective opinion of the participant, from an external

focus point of the researcher, but uses a theoretical foundation to explain a phenomenon. The generic or basic qualitative approach was the best design choice because it allowed me to capture the lived experience (phenomenological) by allowing participants to tell their own story of a common event (narrative) to expand on an existing explanation of why suicide occurred in specific population of people.

Role of the Researcher

One concern identified in literature on research methodologies is the relationship between the researcher and the researched. The researcher has a position of privilege as compared to those being researched (Råheim et al., 2016). From this vantage point, a number of ethical concerns can be identified that include the predetermined imbalanced roles of the researcher and the researched (Råheim et al., 2016). In qualitative research, scholars strive to decrease the separation in a researcher-participant relationship (Råheim et al., 2016). One other issue is the insider-outsider perspective, or the positionality of the researcher defining what it means to be an insider or outsider in the setting of the study (Råheim et al., 2016).

For this study, my role was that of a research instrument in that I collected, analyzed, and interpreted all data. I used the statements obtained in the participants' interviews (data collection) to substantiate, understand and articulate the dentists' experience of occupational stress preceding their suicide. My role as a researcher in this capacity allowed me to find emergent or recurring themes in the experiences of the dentists as reported by the participants, based on their statements (see Sanjari, Bahramnezhad, Fomani, Shoghi, & Cheraghi, 2014).

I did not have any personal or professional relationship with the participants nor any type of supervisory or instructor relationship with them. I may have known of the dentist who committed suicide due to my professional dealings, connections, and working within the dental field. As the researcher, I was careful to continuously "check my privilege" and be mindful of the presence or perceptions of intentional or unintentional biases or advantages that may have been present or implied due to my race, sexual orientation, and educational level (Johnson, 2016). The interview journal was used to bracket my preconceptions on the topic of suicide as a way to identify expected outcomes from the research, and it allowed me to further ensure I did not impart my own views into the interview process.

Methodology

In the methodology portion of this chapter, I describe the setting of the research, identify the participant population used in the study, justify how the participants were identified, and establish how they met the criteria for participation in the study. I discuss the data collection and analysis procedures and ethical considerations for the research.

Participant Selection Logic

In qualitative research, the human participant is critical for true-to-life research (Sanjari et al., 2014). Being able to use people for this research allowed for a much richer research experience, particularly because the focus was on the perception of an experience for which the participants were able to provide immediate feedback, process multilevel information and feelings simultaneously (Sanjari et al., 2014), and validate a different view of the same social phenomenon-suicide. Due to the subject matter in this

study, I anticipated using on purposeful and snowball sampling to help me locate participants for this study. Purposeful sampling is common in qualitative research for situations where rich information is needed, but there are limited participants available (Palinkas et al., 2015). Purposeful sampling depends on being able to find individuals who have special knowledge or experience within a particular area of interest (Palinkas et al., 2015). Snowball sampling is a recruitment method in which the researcher asks participants to identify other people who may be used in the study (National Science Foundation, n.d.). I was able to use both methods in the recruitment of participants for this study.

The ideal participants needed for a qualitative study are those who are able to provide a diverse range of information-rich sources and quality-rich data (Hennink, Kaiser, & Marconi, 2017). To be a participant in this study, the participant had to be a family member or significant other of the decedent who was over eighteen years old. This was the most important criterion as the focus was on the perception of the family member who observed the stress in the decedent. I was able to ensure this stipulation was met by asking potential participants to describe their relationship with the decedent (Appendix A). The participants of this study had to be family members of the deceased, and they have to have witnessed the dentist in various states of emotion. I had to have some way to ensure that the participant would have been able to observe the decedent in his or her daily life and work to see him or her in times of high and low stress. The family member had to be able to report as to how he or she witnessed the decedent's job as a source of stress in his or her life.

Scholars must determine how many participants are needed to for the study (Hennink et al., 2017). Saturation is used in qualitative research as a threshold point for the discontinuation of data collection and or analysis (Hennink et al., 2017; Malterud, Siersma, & Guassora, 2016; Saunders et al., 2018). Saturation is the point at which the researcher may feel that gathering more data about a theoretical construct reveals or yields any new properties or insights about the topic being researched (Hennink et al., 2017). I knew saturation of participants for this research would be difficult to identify, but it seemed evident when the participant’s interviews began to reveal the same patterns that led to suicide.

There are many factors that impact the sample size of a qualitative study. These factors may be founded in the purpose of the study, and then may be shaped by the research design, but will be dependent on the characteristics of the study population and the available resources (Hennink et al., 2017). The participants for this study were limited to the first 3 to 5 persons who met the study participant criteria; however, this number was subject to change if I would not have been able to reach saturation with the target number of participants. Because of the sensitive nature of this research topic, my first step in the recruitment process was to reach out to grief support groups to inform them of the intent of my study and then ask them if they were aware of anyone who may have been interested in participating in the study. The initial recruitment plan was to place flyers at local grief support centers where participants would be able to volunteer for participation. The area was limited to the areas where I was able to find information online about grief support services and groups on for the local area within a driving

distance of 45 minutes to 1 hour of my location. This is an acceptable method of recruiting hard to access, relatively small, or hidden populations, particularly those who may have a stigma associated within them (Heckathorn, 2011; Valerio et al., 2016). Any willing participant who was identified or referred to me was contacted directly by me. The purpose of the study was explained to the potential participants to allow them the opportunity to give their informed consent to participate in the study.

The interview process was explained to the potential participants, and I included a debriefing process after the completion of the study. Additionally, all participants were offered the opportunity to withdraw their participation at any time without penalty. There is a debate on the need for and different ways to compensate participants for their time and help in the completion of a study (Swanson & Betensky, 2015). I do believe that some form of compensation was warranted in this study; however, I had to be sure that any compensation offered was sufficient, but not perceived as a means to bribe or to coerce participants to respond in any particular method (see Swanson & Betensky, 2015). Thus, participants received a $15.00 Wal-Mart or Target egift card.

Instrumentation

In qualitative research, the interview is the most commonly used form of data collection (Jamshed, 2014; Janghorban, Roudsari, & Taghipour, 2014; Oltmann, 2016). However, there are many potential barriers in conducting traditional, face-to-face interviews including finances, mobility issues, location, and time constraints, which may limit the researcher's ability to physically meet with participants (Janghorban et al., 2014). In the event that a participant was not able to meet face-to-face, Zoom was to be

used to conduct the interviews. Interviews can be considered "negotiated text," which are shaped by the working relationship between the researcher and the participant(s), and they can be semistructured, lightly structured, or in depth (Jamshed, 2014). The use of an unstructured interview is typically suggested in long-term field work and would not be an appropriate choice for this study (see Jamshed, 2014). For this study, the semistructured interview allowed for the use of prewritten but open-ended questions, which is standard, as it can be adapted for use in several research settings (Jamshed, 2014). In using this style of data collection, the goal is to conduct a one-time only encounter with a single individual, as opposed to a group setting (Jamshed, 2014). Follow-up interviews for clarity were used as needed.

I developed an interview protocol to be used with each participant to ensure that I would remain focused on the desired line of inquiry, and I used questions focused on the central research question and any associated questions related to the central research topics (see Jamshed, 2014). The guide contained the information collected during the interview, such as the participant number that was randomly assigned as a limited data set, and basic demographic information. Recording the interviews was appropriate as choosing to hand write notes during the interview process can prove to be unreliable and distracting, which may cause me to miss critical points, cues, and signals (see Jamshed, 2014). I also documented items that I may have had to later clarify, including significant observations noted in the participants' demeanor and or body language (see Vagle, 2016).

Validity in qualitative research refers to the appropriateness of the tools, process, and data for the desired outcome (Leung, 2015). The interview guide was created using

the literature on suicide research to shape the phrasing of questions geared towards answering the research question. The interview questions were based on the single, broad research question that was focused on stress as a factor on suicide. The questions were created to allow the participant to tell his or her own story in a clear way in his or her own terms. To develop questions that would facilitate this type of interaction, the questions had to serve more as prompts, but cover basic topics that would allow each participant to focus on how he or she wanted to tell his or her story. In order to keep the research simple, an inverted triangle approach was used, with a focus on keeping questions open-ended, so they started with prompts such as "tell me about" or "can you describe" (Appendix B). The sufficiency of the interview questions was determined based on the guidance of expert review by two research methodologists, a dentist, and a third-year dental student. The formation of the interview questions further confirmed their sufficiency through the ability of the participants to answer questions that centered on the decedent's occupation, stress, burnout, work and events leading up to the suicide.

I recorded and stored the interviews with a battery-powered cassette tape recorder, which allowed me to focus on the interview content and the verbal prompts provided by the participants. I had planned on using Zoom, as a backup method, which is a voice-over internet protocol program released as a free communication service that provides the opportunity to call, see, message, and share video voice and calls with people who are not in the same location (Janghorban et al., 2014; Oltmann, 2016). In addition to the facilitation of family, friends, and peer communication, Zoom has the ability to be saved and stored securely on an encrypted device, which helped me to ensure an additional

level of security in removing the recorded interview from the internet after it was completed, and store it in a secure location. However, when possible, a face-to-face interview was the first choice to obtain the interview data. Phone or online data collection options were backup options if the minimum number of participants was not met with the nonrandom sampling during the initial participant selection process. Because I chose to record the interviews with participants for the qualitative data collection for their research, the interviews had to be translated verbatim to create a transcription of the interview for the participant to review as recommended by (Jamshed, 2014; Sutton & Austin, 2015). This transcription was completed within 1 day of the interview.

Data Analysis Plan

The data analysis for this study was based on the guidance of qualitative coding as described by Saldana (2016). In this analysis plan, the researcher has the responsibility to assign an initial interpreted meaning to the data that will allow for a secondary analysis for pattern detection, resulting in a final level analytic process to occur (Saldana, 2016). In qualitative methods, the data yielded are typically text, not numerical as is quantitative research (Sanjari et al., 2014). Saldana described the first cycle of coding for qualitative inquiry as the short-hand phrasing in which a representational or significant word may be used to capture the initial evoked attribute derived from the data. The second cycle of coding allows the researcher to add longer passages of text, context, or analysis to the data that may allow for reconfiguration and critical linking between collection and the explanation of their meaning (Saldana, 2016). For the data analysis, I started with the

identification of some themes that I thought would be indicators of the observation of the factors of the interpersonal theory of suicide (thwarted belongingness and perceived burdensomeness). I then started on the first cycle of coding by writing the feelings, terms, and factors that came to mind during the interview process. After the interviews were completed and transcribed, I listened to them each again to see what other themes or factors I could identify from the data; this was my second cycle coding process. I then planned to enter the data I collected into a table created in Excel that allowed me to visually see and connect the data for additional analysis.

In this study, the interview questions were centered on the central research question that intended to explore themes on how stressors were perceived by family members of dentists, preceding their suicide. The data collected were extracted from interviews that were recorded using a battery-operated voice recorder. Because the interviews were all recorded as they were conducted, I did not have to rely on writing every participant response immediately. I had the ability to focus on the participant and note details and evoked thoughts, words, and reactions or codes as defined by Saldana (2016). As Saldana explained, this further enabled me to capture the evoked essence of the data in real time. The recorded interviews were then transcribed verbatim in Microsoft Word, allowing me to use multitier data collection and providing the participants with the opportunity to review the transcript for accuracy as well. In the multilevel coding analysis, I sorted and combined the initial coding and notes and reanalyzed for themes, as described by Saldana. This final step of thematic linking was

done in Excel and served as a way to link the data I collected to provide a visual explanation of what that data meant in terms of the themes taken from within it.

Issues of Trustworthiness

Qualitative researchers attempt to characterize and clarify an ambiguous phenomenon in a nonnumerical manner of measurement that is founded on insight provided from research participants (Fusch, Fusch, & Ness, 2018). In order for a researcher to maintain trustworthiness, he or she must have work that possess credibility, transferability, dependability, and conformability and makes ethical considerations geared towards the protection of its participants. In this section, I focus on aspects of the research that addressed the issues associated with trustworthiness in research.

Credibility

In conducting credible research, there has to be a way to ensure that the research can be trusted when expressing statements made on causal relationships (Ruane, 2016). Credibility is addressed in assessment of the goodness of fit between the research and the plan of action (Ruane, 2016). Learning from and admitting missteps is an integral component of qualitative research and adds to the credibility of the researcher and subsequent research (Sanjari et al., 2014). One common way to add to the credibility of research is through the incorporation of triangulation. This refers to the use of multiple sources of data collection methods to enhance the reliability of the study (Fusch et al., 2018). For this study, to ensure credibility, I recorded the interviews, transcribed them, and allowed the participants to review and approve the transcripts for accuracy. Data also came from the use of interview guides and participant interviews.

Transferability

Another consideration in research is if what was discovered in the study can be applied beyond that specific study in which it was found, and whether the results are generalizable to other groups (Ruane, 2016). Transferability rests on the ability to use representative sampling of a population, and to replicate the process to apply the finding to other settings (Ruane, 2016). It is imperative to have robust descriptions of the participants and the processes used to conduct each step of the research process. The detailed design allows future researchers the ability to audit and recreate the study. Thorough descriptions of the research and assumptions which are critical to the research help to enhance the transferability of qualitative research (Ruane, 2016). Although generalizability should not be an expectation of qualitative research due to the focus on specific issues or phenomenon in specific groups or settings (Leung, 2015), I tried to ensure transferability in my study. I tried to ensure this by following the advisement outlined by Ruane (2016) and Leung (2015), which is to provide clear explanations and step-by-step accounting of the research rationale and design, data collection and analysis processes, and reporting the results in a clear and accurate way. This should allow for the procedural replication of the research process to be generalized in other contexts.

Dependability and Confirmability

To provide the opportunity for future researchers to confirm and retest my research findings, I took measures to ensure that the standard for dependability and confirmability are met. For this study, triangulation through the use of interviews, notes in the interview guide and themes identified in data analysis allowed for multiple data

collection sources to confirm interpretive accuracy and increase dependability as explained by (see Simon & Goes, 20016). Additionally, allowing the participants the opportunity to verify the information they provided was recorded accurately helped to ensure response uniformity, which helped corroborate the accuracy of the research instrument and responses and increases the credibility of the study (Simon & Goes, 2016). The participants had an opportunity to modify, clarify and then approve the interview transcripts, and a copy of the findings from the research was given to each participant.

Ethical Procedures

In even the most systematic and organized studies, there are potential instances in which conflicts in ethical processes arise (Karagiozis, 2018). Credible, scholarly research involving participants has to have clear efforts taken to ensure ethical treatment, and to be cognizant of the wider epistemological context in which the intent, research questions, researcher and participant relationships, and data interpretation are embedded (Karagiozis, 2018). The researcher must cause no harm to his or her participants and ensure that the benefits of participation outweighs the risks, which Ruane (2016) explained as the only way to ensure ethical credibility.

Before any research began, I obtained permission to conduct the study from the institutional review board (IRB) at Walden University (approval number 05-07-20-0510726). I submitted the necessary applications and proposed recruitment procedures and materials as they requested to ensure that I adhered to their policies of ethical treatment of human participants. With the help and guidance of the IRB, I had

appropriate plans in place to address any adverse reactions and situations that may have ensued as a result of participants contributing to this study.

The biggest ethical consideration for this study was its dependence on the use of participants who had experienced a loss due to suicide. Although Ruane (2016) stated that it can be difficult to predict the negative consequences of research, I conducted an inquiry on previous research on the bereaved. Scholars reported that those who are in the bereavement process following suicide experience emotional pain, blame, guilt, and emptiness in addition to difficulty in making meaning of the event (Shields, Kavanagh, & Russo, 2017). However, recent researchers have shown that there is benefit for the bereaved in their participating in research on suicide (Andriessen et al., 2018; Castelli-Dransart, 2017; Neimeyer & Sans, 2017), which validated the benefit of conducting the research. The potential to provide more understanding on suicide in dentists outweighed the risk of using bereaved persons to detail their perceptions on their family member's suicide.

A consideration for qualitative research is the implementation of ethical processes that focus on benevolence, doing no harm, ensuring justice and the protection of identity and dignity, and ensuring integrity in the report of research results (Petrova, Dewing, & Camilleri, 2014). This can be particularly daunting when the research is focused on a small and distinct population, such as dentists in a particular region of the country; therefore, confidentiality is of the utmost importance (Petrova et al., 2014). One way to ensure that the confidentiality of the participants was maintained began with informed consent followed by lay-termed explanations, not assuming participants were aware of

the steps in place to protect them or how I would protect their identities, but I took the time to explain to them all the ways I would do so.

An additional layer of protection was provided through the assigning of pseudonyms as recommended by the Center for Research Quality at Walden University. Additionally, I did not ask for information that would have otherwise compromised their identities, and if any information was provided that could be used for individual identification, it was not necessary to record for the study. This was done by limiting the description of demographic information and not identifying the location of the participants or the lead that connected me to the participant. The interview guides, taped recordings, and other recorded data will be kept inside of a locked file cabinet in my home for a period of 5 years and will then be destroyed.

Summary

This chapter was an exploration of the methodology in this study. The rationale for the use of the generic, qualitative approach was explained as well as the plan for the selection of participants for interview. Procedural information on the interview protocol and data collection, storage, and analysis was also discussed. The plan for ethical considerations (transferability, reliability and dependability in the research) were also outlined. The next chapter will include the data collected and analyzed in the study as well as provide a detailed discussion of the identified themes noted during the data collection process.

Chapter 4: Results

The purpose of this study was to gain a better understanding of the way in which occupational stress in dentistry preceded the occurrence of suicide. The goal was to determine how a deceased dentist's family member describes the occupational stress of the dentist so that I could determine how that stress may have been present as a precursor event for the suicide. This study was guided by a single research question: How was occupational stress perceived by family members as a precursor experience for dentists who have committed suicide? In this chapter, the setting of the interviews, participant demographics, data collection and analysis procedures and details will be outlined. Additionally, the evidence of trustworthiness and results will be discussed, and a summary of the findings and chapter will follow.

Setting

The participants needed for this study were taken from a small subgroup of a subset of the population. I was seeking family members of dentists who committed suicide. Initially, the plan was to distribute fliers to grief support agencies and ask them to post or forward to participants of the groups or other individuals who may have been interested in participation in this study. However, due to limitations of face-to-face interactions because of the emergence of the COVID-19 pandemic, none of the agencies and or groups I contacted were able to meet face to face. I had a list of 20 area locations that I attempted to contact to see if they would be willing to post and or distribute my recruitment flyer at their meetings. Of the 20, five were no longer meeting either due to the pandemic, or they discontinued service all together. Of the remaining fifteen groups,

11 had email addresses or a direct person I could contact to inquire on distribution of the flyer, and four had general numbers, which I was able to leave messages on. Of the 11 emails sent and four phone calls, I only got three responses, and only one support service leader was able to pass my information on to an active support group member who I was able to interview for the study. The three remaining participants used in this study were referred to me from participants, or snowball sampling.

The participants were contacted by email and phone, so I was able to talk with them each about their participation in the study; I offered information on the study and inquired about their willingness to participate. Once they agreed to participate, I immediately sent them an electronic consent form, and after ensuring all questions and concerns were addressed, I obtained written informed consent via email from them to participate in the study. I did have two potential participants decline to participate after receiving the consent form. Due to the pandemic, all interviews had to be via Zoom, as face-to-face interaction was not permitted due to social distancing and shelter in place regulations for our area.

Demographics

For the purposes of this study, only broad and nonidentifying demographic information was needed from the participants. The major demographic information relevant to this study was the participant's relationship to the decedent. Secondly, I added the gender of the family member participating in the study as I thought it may have been significant to note, this information is listed in Table 1. Out of the four total

participants (P), three were female (two spouses and one niece of the dentist), and one was male (son of the dentist).

Table 1

Participant Demographics

Participant No.	Relationship to Dentist	Gender of Participant
(P-1)	Spouse	Female
(P-2)	Child	Male
(P-3)	Spouse	Female
(P-4)	Niece	Female

Data Collection

Kondowe and Booyens, (2014) explained the procedures to plan, gain access to a particular area, and find willing (reliable) participants. However, there are unforeseen, real-world factors that may present themselves during the construction and execution of participant selection (Kondowe & Booyens, 2014). The target sample size for this study was three to five participants, with the actual number of interviewed participants being four, the primary source for data collection for this study was going to be face-to-face interviews, with a secondary option being a VoIP method such as Zoom. However, during the research approval process, the emergence of the COVID-19 pandemic prevented me from being able to meet with participants face to face. Due to social distancing protocols and area shelter-in-place ordinances for the state, I had to rely solely on an online data collection option. This allowed me to adhere to all safety protocols and rules while continuing the recruitment and research process.

The interviews of the participants took place via Zoom virtual chat, and they lasted less than 40 minutes per participant. Zoom was selected as the platform for use because it offered a recording option, which I was able to convert to save on the digital voice recorder I planned to use for face-to-face interviews. I did not use the video feature provided in Zoom; rather, I opted for the audio only feature to try to offer the participant an additional layer of confidentiality and anonymity. During the interviews, I made notes about any key words or short phrases that the participant said that I could later review and compare with the other data for coding and analysis (e.g., *internalized,* or *isolated*). Once the interviews ended and were converted for storage, they were removed from my computer as a security measure, and they were stored on a micro card that could be physically secured and digitally encrypted off of the computer. Next, all the interviews were transcribed into Microsoft Word verbatim and then sent to each participant for their review and approval. I did not analyze any data from the transcripts until the participant approved it.

Data Analysis

When trying to determine the best way to analyze the data, I was not sure where to begin, so I reviewed the interview questions again to determine what I was trying to pinpoint in my questions. I took a different look at the interview question and guide, reading now for categorization. I had to determine what factors would describe issues with belongingness and burdensomeness, and how would those factors be observable to others. This led me to follow a model of the use of precoding, which was explained by Saldana (2016) as the starting point in my data analysis. I created a table in Microsoft

Excel based on the two major constructs in Joiner's (2005) interpersonal theory of suicide: thwarted belongingness and perceived burdensomeness. I took some central themes that I felt emerged from the interview questions and sorted them into those two categories: one centered on belongingness and the other on burdensomeness (see Table 2). Then I determined what factors would be a good indicator of each component and would emerge from the interview questions.

Table 2

Precoding Themes for Data Analysis

Perceived Burdensomeness	Thwarted Belongingness
• Observations of stress	• Affiliations changed
• Specialty (high stress vs. low stress)	• Negative perceptions
• Work Life Balance (balance vs. burnout)	• Perceptions (fitting in vs. not fitting in)
	• Life events (constant vs. change)
• Quality of Life-Health (declined vs. stable)	

My initial thought process was that the data would show a perception of burdensomeness with significance being in identification of the generation in which the dentist was a part of, the level of stress of the dentists as associated with their particular specialty of dentistry, if the dentist was able to maintain work-life balance, and their personality in as evidenced in terms of working alone or in an associateship. Additionally, I believed that belongingness could be assessed in determining the quality of life of the dentist as related to health or finances, any life events that may have occurred prior to the suicide, and the type of affiliations the dentists maintained.

The data analysis process did not start until each transcript was reviewed and approved by the participants. One component of coding that was pointed out by Saldana (2016) was that most qualitative researchers code their data during and after its collection, and while coding and analysis are not synonymous, coding is critical for analysis. My first level of coding was to extract data that could be sorted into a list of thirteen items that would identify the data that was coded within a table I created in Excel (see Table 3). For example, I was able to assess the generation of the dentist based on the number of years practiced at time of death or when they completed dental school as reported by their family member. I used the dentist's area of specialty to determine if they worked in a discipline considered to be a high stress specialty such as oral and maxillofacial surgery versus low stress areas such as general dentistry-this is a subjective generalization, just for the purposes of coding in this study.

Table 3

Coded Data

Codes	P-1	P-2	P-3	P-4
Gender of Dentist	Male	Male	Male	Male
Years in Dentistry	40	40	35	25
Stress from Specialty of Practice	No	Yes	No	No
Change in Marital Status	Yes	No	No	Yes
Work/Life Balance	Yes	No	Yes	Yes
Introverted Personality Type	No	No	Yes	Yes
Quality of Life-Health	Yes	Yes	No	Yes
Life Event/Change	Yes	Yes	Yes	Yes
Change in Affiliations	Yes	Yes	Yes	Yes
Negative Perceptions by Others	Yes	Yes	Yes	Yes
Substance Abuse	Yes	Yes	Yes	Yes
Quality of Life-Status	No	Yes	Yes	Yes
Negative Emotions/Feelings	Yes	No	Yes	Yes

In the coding table I created in Excel, I also left some space for other themes that emerged from the data or during the interview (see Table 4). These factors were more focused on those themes that could later fit the categorizations as a determination on the perception of burdensomeness and thwarted belongingness, but where not necessarily themes that I predetermined to be indicators of those two factors before I completed the interviews. Also, initially, the use of marital status was to be used in the general demographic information, but I later determined that the addition of marital status was important to note on this table as related to life changes, changes in affiliation, or isolation as I continued to analyze the themes.

Table 4

Emerging Themes

Themes/Subthemes	P-1	P-2	P-3	P-4
Change in affiliations	X	X	X	X
Negative perceptions	X	X	X	X
Change in quality of life	X	X	X	X
Work-life balance	X		X	X
Substance abuse issues	X	X	X	X
Observations of stress	X	X	X	X

Keeping the use of coding as a heuristic in mind (Saldana, 2016) during the initial data collection, I listened and wrote any single words or simple phrases that may have come to mind or were addressed implicitly or expressly during the interview process (i.e., terms like *kept it buried* for burdensomeness and *reputation* for belongingness). After participant approval, I began the second step in the data analysis process, in that I listened to each interview while also reading the transcript and wrote down any other factors that

emerged that I did not have listed in the precoding charts. Due to the small number of participants in the study, I could not fully determine which, if any, cases could be determined to be discrepant. So, for the purpose of this study I only included themes from factors which I believed provided more depth in understanding how the dentist's experiences may have led to suicide. This also helped me measure saturation in my sample because at this point, the answers offered no new information from the participants.

Evidence of Trustworthiness

In Chapter 3, there were several points relating to trustworthiness that were implemented and or adjusted during this process or analyzing and coding the data. Credibility, as previously explained, is assessing the fit between the research and the plan of action (Ruane, 2016). As anticipated, there were necessary modifications that had to be made to the plan of action that included a form of triangulation, which refers to the use of multiple sources of data collection methods to enhance the reliability of the study (Fusch et al., 2018). For this study, I used the precoding chart that was created from extracted concepts from the interpersonal theory of suicide. The interview guide questions were then used to create a framework for data that I could use to validate the presence of burdensomeness and belonging prior to the interviews. Then, the interviews were conducted, recorded, and transcribed to allow the participants the opportunity to revise as they felt appropriate. From there I was able to use the interview transcript and recordings to code and pull out themes and factors that were central to determining the influence of occupation on the suicide occurrence. I also sought additional guidance on

development or revision of the interview questions I developed. The goal was to word the questions in a manner that would accurately capture the elements that seemed to best spotlight the interpersonal theory's constructs of burdensomeness and belonging. In order to make sure triangulation occurred, the interview guide I created was reviewed by a general dentist with over 20 years of clinical experience, a 4th-year dental student, a dentist who is an established research methodologist, and a research methodologist. Using them to scrutinize my questions helped me determine if the questions I was asking were a good fit to assess the constructs as intended (i.e., burdensomeness and belongingness).

Another consideration in research is what can be applied beyond the study in which it was found, and whether that information be transferred to other groups (Ruane, 2016). Transferability is assessing if a study's processes can be replicated to other representative samples of a population (Ruane, 2016). Because the research topic is specific to a subgroup of the population, it is even more imperative to have robust and thorough descriptions of the participants and the processes used to conduct each step of the research process. My explanations and step-by-step accounting of the research design, data collection, and analysis should allow for the procedural replication of the research process to be generalized in other contexts by other researchers. Future studies on suicide can use this study to identify similar patterns in other victims of suicide, or in suicide research. Additionally, this study could be a link to other studies on the topic of suicide to help determine experiences in others who may have similar precursor events. By exploring the lived experience of the family members of dentists who committed

suicide, readers can generalize this information to others in similar situations by providing some insight on how families observe and perceive stress in each other.

Dependability and Confirmability

In order to provide the opportunity for future researchers to confirm and retest my research findings, I took measures to ensure that the standard for dependability and confirmability were met. For this study, triangulation using interviews, notes made during the data collection phase, and the interview guide allowed for multiple data sources to confirm interpretive accuracy and increased dependability. These steps, in addition to allowing the participants the opportunity to verify their answers (review and approve the transcripts), ensured response uniformity, which helped corroborate the accuracy of the research instrument and responses and increased the credibility of the study as outlined in previous empirical research (Simon & Goes, 2016).

Results

According to Saldana (2016), the arrangement of things in a systematic order that makes them a part of a system for categorizing is codifying. The process of codifying was my next step in analyzing the data. After entering all the participant's data, I moved things around on the tables I created in Excel to group similar data together to help visually link it. This way, which Saldana (2016) explained, is a method that allows for the association of meanings and development of clarification of what I found in the data. After this codifying and rearrangement of data into meaningful categories, I was able to look at the data as text to see what similarities or commonalities emerged from the findings within the tables this is referred to as pattern coding (see Saldana, 2016). As

explained by Maguire and Delahunt (2017), the goal of thematic analysis is to identify patterns in the data that were important and interesting to add information on a particular issue. The extraction of themes from the data were based on their significance as identified by the majority of the participants reporting similar information. In keeping the focus centered on the research question, I was able to formally answer the research question. Within the data analysis process, I was able to identify four themes that served as precursor events to the suicide and that will be discussed in detail below these will be outlined in detail.

Emerging Themes

Observations of stress. The family members were able to articulate observations of stress that they perceived in the dentist who committed suicide. The family members were able to provide information on instances that indicated the presence of stress in the dentist. These observations validated constructs that supported the occurrence of thwarted belongingness and perceived burdensomeness that make up the foundation of the interpersonal theory of suicide. There were also themes that could have gone into either category, depending on what the family member conveyed in their observations, and themes that did not fit into either of the interpersonal theory's constructs.

Thwarted belongingness. There were instances that indicated all four of the dentists' feelings of not belonging or fitting in were perceived by their family members. The dentists' affiliations changed because they no longer felt like they fit in or belonged anymore. The family members conveyed the isolation and separation from those people or groups the dentist had previously interacted with. P-1 indicated that "we're heavy and

they were all, you know, Barbie doll girls and boys, and I don't know [he] didn't feel like he fit in or something." P-2 indicated that

> [My dad] withdrew from everybody, he just got to the point where he just avoided everybody, his friends, his family, [everybody]. It finally got to the point where he would not even go to work, or even call us to even say 'hey, I'm alive' or nothing.

P-3 stated that "[My husband] cut ties with mostly everyone he hung out with in the dental community, he just stopped going anywhere where he knew he would run into them." P-4 said that "[My uncle] got to a point where he stopped going around most people, he was alone a lot." These instances supported the theme of the dentists not feeling as if they fit in or belonged to the groups they previously associated with. These feelings did not just apply to organizations, associations, or work-related groups, but also to the dentist's affiliations with family and friends.

Negative perceptions. Another theme that was identified in all of the participants was that the dentists felt that other people viewed them in negatively. In P-1, one example of this was in the earlier recount of the weight gain the dentist experienced that left him feeling self-conscious around others, but also in that "He was adopted, so I guess he always felt like maybe he wasn't good enough or something." P-2 stated, "When my dad started having all of these [health] issues he felt like people felt sorry for him, like even just someone asking him how he was feeling embarrassed him." P-3 stated that "He was ashamed, and he felt like everyone was judging him." P-4 recalled a similar sentiment in saying "My uncle felt like everyone judged him, they felt like he was

disgusting because no one really approved of his lifestyle." This feeling of being viewed negatively, whether just occurring in their own mind, or being actually true could not be fully validated; however, according to the family members, the dentists felt that they were looked down on, pitied, rejected, or judged by others.

Perceived burdensomeness. There were also instances observed that validated the perceptions of feelings of burdensomeness that the dentists perceived, which their family members were also able to articulate. The participants noticed that there was a change in the quality of life that the dentists experienced. This change was observed in the decline in health (P-1 and P-2) and status (P-1, P-3, and P-4) in the dentist. There were health issues identified in the dentists (P-1 and P-2) that were articulated by P-1 who stated that her husband had "shoulder spurs…it made the range of motion in his upper body difficult." In addition to this, P-1 explained that while engaging in a high impact leisure activity,

> He fell on his head and he chipped a little piece of his skull and he had constant pain after that. But there was nothing they could do. [It] was a small chip on the back of his head where the helmet didn't give on the dirt.

P-2 said

> I didn't know how bad it was at the time, but after he died, I remember my mom saying he had something kind of like Parkinson's Disease. [Because of the disease] he did not have control over his own body, and I know for sure that made things hard for him.

The decline in health for the dentists left them in a situation in which they were not able to maintain the previous level of work or activity they were accustomed to.

There was a bit of a difference in circumstances for the dentists (P-1, P-3, and P-4) who experienced a decline in status preceding their suicide. In these instances, P-1 explained

> The business aspect of him that did him in, I think. He was not a businessman...His practice suffered, [his staff] adored him, they still adore him, but they didn't like all that stuff going on [in his personal life]. And so [his practice] went down the tubes from almost a million dollars a year practice to people not wanting to come in. It changed his personality as well.

P-3 described her husband as

> living 2 lives for a while. He was [having an affair] and it made things in his office awkward...It was really tense; you could feel it...I think it just got to the point where he could not keep all the balls in the air...Some of his staff started walking out, the patients stopped coming in, things definitely got bad financially..."

P-4 stated "[My uncle's lifestyle] was not acceptable where we are from. People did not want to be around him or let him be their dentist anymore. Eventually, people stopped coming in and he ended up losing his practice." These instances in declining financial statuses showcased the perception of burdensomeness, in terms of the dentists not being able to maintain the standards of life they may have been accustomed to previously, to the extent where their practices suffered tremendously.

Work-life balance. The next theme that came out of the data was work/life balance that was maintained until a life event/change had a negative impact on the dentists. There did not appear to be any noticeable changes in the dentists' ability to maintain work/life balance prior to the occurrence of some life change or event that negatively impacted the dentists. This was seen in instances of the dentists still having an outward appearance of stability or consistency to their family despite the other factors that were occurring in their lives. P-1 stated,

> He loved dentistry...I couldn't say that he felt burned out ever…he had like 9 to 5 hours but he would go in anytime [to see patients] and would take our sons to assist him, so he didn't bother his employees...as he used to say, 'I'll work as long as they let me, as long as they come in, I'll work.'

P-3 shared similar sentiments initially stating

> [He] loved it! He would look forward to going to work every day, but he knew when it was time to be off and be the daddy, or the husband, but I can't think of a time he wasn't there with our kids...I don't know how he did all that.

P-4 stated

> Looking back, I would say he was just kind of sad sometimes. I think it just like blew people away that he [came out] ...that was like the hot gossip in our town...[My uncle] was married...but I think he just could not be his self and that ate at him, and he got real depressed after that.

P-2 had a different circumstance in that he described his father's circumstances of working as a source of lot of stress in his life and in their family. P-2 explained that

> [He] usually saw people at a point where there were [in pain] … [his area of dentistry was] expensive, and people dreaded going to see him. It's hard to be the bearer of bad news all the time, and [because of his specialty] he did do some late nights and weekends at times when most people were off.

P-2 detailed that his father experienced a life event that by way of an illness that changed the way that his work and personal lives were functioning. These instances showcased that the dentists enjoyed work and home and were able to maintain balance by not valuing one over the other in their lives before some instance that had a negative outcome on their lives.

Substance abuse. All of the dentists had instances of substance abuse preceding the suicide event. In the first dentist, it was noted by P-1 that

> He got in with this other girl…she was into drugs…and he got to drinking really bad too… I never saw that coming…he used to be the cutest little, little tipsy fun man. When he'd get a little tipsy, he'd dance and cut up…then it got excessive and he was no longer cute with it, uh, uh.

P-2 described his father's situation by saying

> I don't think he meant to get to that point. I think it started out with muscle relaxers or pain relievers I am not sure which, but then he was alone all the time and started drinking while taking his medicine, and that is never a good thing.

P-3 stated that she knew her husband

> Drank socially, but it was never to the point of being drunk, and then one day it was…I am pretty sure [the other woman] was popping pills and I am sure he started doing that too…he acted like he was on something.

P-4 described "His drinking got real, real heavy after his practice closed…There were rumors that he [was using cocaine] but I never saw that, only the drinking." In each of the dentists, there were instances in which the participants were able to confirm the abuse of alcohol and or drugs in the dentist. This theme did not fit into the categories of thwarted belongingness or perceived burdensomeness but is crucial to not as the occurrence of substance abuse may have served as a facilitating factor that may have led to the suicide.

Summary

The focus of this study was on exploring how occupational stress perceived by family members was a precursor experience for dentists who have committed suicide. After reviewing the data, and exploring the identified themes, there is an overarching finding. The four themes from this study confirmed that while stress was observable by the family members, there were precursor events that led to the suicide. The overall pattern leading towards the occurrence of suicide that emerged from the data was that for all of the dentists, there was some underlying issue that troubled them in some way, and then some life event took place that had a negative impact on their life; because of some facilitating factor, the suicide then occurred. Dentistry seems to play more of a background role in the suicide occurrence, as it does not appear to be a direct factor in suicide causation. This pattern will be discussed more in the next chapter.

In this chapter, the purpose and procedures, setting, and demographics were described. The procedures followed to collect and analyze participant data was explained in detail. The steps taken to address issues impacting the trustworthiness of the study were described, and summary of the answer to the research question was provided. In the next chapter, there will be more focus on what these results mean and how they relate to what is already known about suicide in dentistry. There will also be some discussion of the study's limitations, future recommendations, and implications for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

This study was conducted to explore how occupational stress contributed to the occurrence of suicide in dentists. The methodology used for this study was qualitative with a generic approach, and it consisted of semistructured interviews. The goal was to determine how occupational stress in dentists who committed suicide was perceived by their family members as a precursor event to their suicide. The generic, qualitative methodology allowed the focus to center on a phenomenon based on the perspective of the people involved, while affording more flexibility in the approach and practical application (Caelli et al., 2003). Of the four participant interviews, the confirmation of stress being perceived by family members was shown in the identification of six themes taken from the data: (a) observations of stress, (b) affiliations changed, (c) negative perceptions, (d) change in quality of life, (e) work life balance, and (f) substance abuse. Additionally, there appeared to be a consistent pattern that facilitated the suicide occurrence. These themes and patterns, limitations of the study, recommendations for future research, implications, and an overall conclusion will be discussed in this chapter.

Interpretation of Findings

The overall themes that emerged from the data seemed to extend what was previously known about suicide. This chapter details the connection of the results to the literature to describe how the findings contribute or compare to what is currently known about suicide. There is also a discussion of how the findings related to the interpersonal theory of suicide, which was the conceptual framework for this study, and to the overarching research question which guided the study.

Precursor Events

As identified by the data, there were perceptions of stress observed by the family members who committed suicide; however, it was not evident that occupational stress was the precursor event to the suicide. The identification of the actual events that were observed by the family members as precursor events to the suicide differed in each participant but seemed connected as overall constructs. These constructs were not specific to the occupation of dentistry. There were six themes that were identified in study (see Table 4), and within those themes, there were three factors that the family members described that seemed to be precursor events that formed a pattern that led to suicide: (a) dentists affiliations changed, did not feel they belonged or fit in anymore; (b) dentists felt others viewed them negatively; and (c) life event/change had negative impact on dentists. This will be discussed in detail in this section. In terms of discrepant cases, the data showed that the above themes were embodied in all the participants in some implicit or explicit manner.

Connection to Literature

The constant in the study of suicide is that there is still no one explanation of the cause (O'Connor & Knock, 2014; Tucker et al., 2015). This study only contributed to further confirm that fact. The overarching themes pointed not to a causation, but more of a pattern that served as a confirmation of circumstances that were present in each individual dentist prior to the occurrence of their suicide. The same pattern was there in each dentist and showed some underlying issues that disturbed the dentist. In summary, P-1 described that her husband never felt good enough, and that he did not fit it or belong; P-2 described that his father felt like people felt sorry for or pitied him; P-3 explained her husband was embarrassed and felt judged; and P-4 felt like he did not fit in and was not accepted. In each dentist, there was the occurrence of a life event. P-1 believed it was their divorce and business failure, P-2 stated it was a progressive illness, P-3 believed it to be when her husband's affair became public knowledge and they separated, and P-4 stated it was when her uncle's sexual orientation became a topic of public knowledge and scrutiny. Finally, there was a facilitating factor present. In all the participants' observations, there was confirmation of substance abuse by the dentist. Although all of these individual occurrences and factors were different in the individual dentists, the pattern seemed to occur in the same order. There were perceivable occurrences of stress observed by the family members of the dentists who committed suicide. However, these events are not specific to dentists, but may have a significant association with occupation more likely due to character traits found in dentists as a generalization.

In the literature, there was support of chain reactions that eventually led to the point of a low-level stimuli occurring, leading to a suicidal event (van Heeringen, 2012). The singular connection that could be made to dentistry, as an occupational group in these instances, is that dentists tend to possess certain personality traits that may make suicide more likely. The literature discussed the exacting nature, tendencies to internalize, and working in isolation as characteristics common in dentists, which would validate the appearance of high rates of suicide in this occupational group (Naidoo, 2015; Rada & Johnson-Leong, 2004). Claytor (2016a, 2016b) described a level of commonality that is seen throughout data on dentists' characteristics, which shows the prevalence of codependency and addiction, obsessive-compulsive tendencies, avoidant personality, narcissism, fear, and anxiety. These factors would serve as a connection or overlap with some known factors that may point to causation for suicide in an occupational group to be elevated. In each instance, the dentists in this study was confirmed by their family member as having tendencies to internalize (P-1, P-2), avoidant personalities (P-2), and instances of substance abuse (P1, P2, P3, and P-4).

There was a negative impact on the dentists in terms of how they believed they were viewed by others. Although I cannot say that this factor singularly led to suicide, it connects to the literature that showed support of the influence of popular opinion and public perceptions on suicide occurrence. Livelihood is affected by more than just work-related behaviors. Kenny and Johnson (2016) described how public perceptions from various outlets has created situations that allow a health professional's fitness to practice being called into question. Claytor (2016c, 2016d) explained that dentists with

codependency issues have self-worth and self-views founded in how other people make them feel, which can lead to chronic self-neglect. Due to the presence of social media, a person's actions, thoughts, feelings, and beliefs are not only preserved, but are able to be spread globally (Affleck & Macnish, 2016). Dentists have to deal with opinions being broadcasted and judgment based on factors that may not have any bearing on their abilities as a clinician. This was the case in P-1's husband's staff who disapproved of his life choices that eventually led to his practice's closure, P-2's father who felt discounted and pitied due to his illness, P-3's husband who felt judged and shamed by his peers and colleagues due to his extramarital affair, and P-4's uncle ostracization due his sexual orientation. Because most medical practitioners are held to a higher standard as per their code of ethics (Holden, 2017), a dentist may find personal disappointment in any negative perceptions from the public or fellow dentists. As identified in the results of this study, the participants all confirmed situations in which this was true in their family members who committed suicide. In each of the instances in this study, there was a belief that others had unfavorable views of them or their reputation; these beliefs impacted them on a personal level, which may have contributed to the suicide occurrence.

Another factor worth noting is there appeared to be some underlying issue present in each dentist. This expands on the stress-diathesis model of stress, which is based on a person's predisposition to react to stress once it reaches a threshold (van Heeringen, 2012). Claytor (2016c) explained that dentistry has been an ideal profession to those who may have personality traits that predicate dysfunction; these include perfectionism,

compulsive personalities, isolation-driven personality traits, and unnecessarily high standards of performance. P-1's husband feeling rejected from childhood, P-2's father feeling as though no one would see past his illness, P-3's husband wanting to portray perfection, and P-4's uncle in his need for acceptance. In each of these dentists, there seemed to be some element beneath the surface that predisposed them to be sensitive to stress in a manner that followed the continuous nature of the diathesis model as it relates to suicide. Van Heeringen claimed that the diathesis became more prominent and proceeded the suicide event. Claytor explained that a lot of dentists have the characteristics that are obsessive-compulsive type behaviors and can override how they control or cope with life events. This similarity in characteristics among the occupation may be why dentists seem to have an elevated rate of suicide.

Connection to Theory

The themes identified in the study also lead to validate the interpersonal theory of suicide. In this theory, there were two psychological states (perceived burdensomeness and thwarted belonging) that when present at the same time, for a period of time, lead to the development for a desire to die by suicide (Joiner, 2005). The themes that were identified from the data analysis pointed to the presence of a feeling of burdensomeness that was identified in the reports of quality of life in terms of health decline and the internalizing nature of the dentist’s personality identified the themes. Thwarted belongingness was represented in the data in negative or declining associations as described in a theme, in the perceptions of how others viewed the dentist, in the identification of life events and quality of life as associated with status, and in the

inability to maintain work life balance in the presence of negative life events as identified in theme.

Claytor (2016b) stated that being busy and outgoing are sometimes indicators of trying to be everything to everyone, and it can encourage isolation and depression. In the data, there is evidence that through a series of factors, both components of the interpersonal theory of suicide were represented and persisted as the pattern identified previously emerged. In P-1's recount, burdensomeness and not belonging were expressed in not fitting in and not feeling accepted by his biological mother, and his practice failures due to poor business sense. P-2's father isolating himself due to feeling pity and shame for not being able to control his body because of his illness were validation of burdensomeness and thwarted belonging. P-3's husband feeling shamed and judged by his community and peers, and his business failing showed the presence of burdensomeness and not belonging. P-4's uncles having to hide his sexual orientation, and then losing his practice due to public judgement substantiated his feelings of burdensomeness and not belonging. There was some underlying issue that disturbed the dentist; this may have been something as identified by the family member that may have been present since childhood or emerged in later adulthood (e.g., not feeling good enough, progressive illness, or sexual orientation). In remaining a dormant but salient part of the dentist’s life, these undercurrents created a diathesis that presented as a type of vulnerability or sensitivity in the dentist. Because this underlying issue remained over time, the later occurrence of a life event, such as a separation or divorce (P-1, P-3, and P-4), illness (P-2), or severe injury (P-1), created the opportunity for a simultaneous

occurrence of the two psychological states. This resulted in an opportunity for the development of the desire to die by suicide. The final step in the pattern was a facilitating factor that lead to an acquired capability as identified in the interpersonal theory as the shift from the desire to commit suicide to having suicidal intent (Ma et al., 2016). Claytor also claimed that dentists often deal with their need for acceptance by being codependent. This factor could be seen in the report of the dentist's substance abuse in all the participant's family members, and it was also seen in the continuous presence of being in pain (P-1) or ill (P-2).

The concept of stressors that were caused and manifested in different ways seemingly had the same impact on each dentist. As Rosiek et al. (2016) stated, the stress response in a person who is actively trying to adapt to stress will result in changes to his or her cognitive and emotional settings and behavior defenses. Dentists who are unable to maintain work-life balance can develop generalized anxiety disorders, burnout, suicide ideation, and chemical and behavioral addictions (Claytor, 2016b). The pattern of events that occurred in each dentist over time was a wholly overwhelming experience. The subsequent anguish preceded the occurrence of the suicide event, and as explained by Joiner's (2005) theory, were present in a compounding and simultaneous manner; the dentists desire to die by suicide resulted. The conclusion of the results from this study pointed to a combination of the stress diathesis model and interpersonal theory of suicide, creating an overlap in the factors which culminated in a suicide event.

Connection to Research Question

The themes identified in the data provide more understanding of the present of stress in the dentists who committed suicide. The results showed that although there were instanced of stress identified in each dentist by their family members, stress from dentistry as an occupation was not the factor in which preceded the suicide. Being a dentist did not cause the dentists to commit suicide, and there was no instance in which dentistry as a singular factor facilitated the occurrence of suicide. Due to dentists being a small subgroup of the population at large, the trajectory of any negative event (real or perceived) seems more significant, which suggests there may be an illusionary correlation. Perceiving that there is a relationship between two variables where there is none refers to an illusory correlation (Chapman, 1967; Prazienkova, Paladino, & Sherman, 2017). This phenomenon was exemplified in this case by associating dentists with suicide and in general to the systematic errors that are commonly made in the estimated correlation between two constructs or events (Chapman, 1967). In other words, news travels fast in small groups, and occurrences may seem to be greater in numbers within small or minority groups (Prazienkova et al., 2017). The data shows that the more likely precursor events to the suicide came from stress and events that occurred outside of the occupation.

Limitations of the Study

There were three main limitations of this study that need to be noted for future replication. First, there was a reliance on a secondhand recollection of how the dentist felt. This could not be helped as there was no possibility of knowing the true mindset of

the dentist; however, in relying on those closest to the dentist, I was also limited in not having the first-hand accounts of the suicide victim. As identified in Chapter 1, there is inconsistent and limited documentation on suicide in terms of the presence of comorbidity and other factors that may have also impacted the suicide occurrence (AFSP, 2016; Pendanam, 2018). Yellowlees (2018) also found inconsistencies in how suicide is defined and reported dependent that differ from person to person. This meant that there was a chance for bias and skewed perceptions because the actual dentist could not answer questions. Because this study was reliant on family accounts, there may have been relevant information that was inaccurately depicted and/or omitted from the interview.

Additionally, there was a small sample size for this study. which limited the inferences and connections that could be made in the data. As also referenced in Chapter 1, there was an expectation that there would be a limited number of cases in which data could be found due to the numerous methodological and reporting inconsistencies in the data and literature on suicide (CDC, 2012). There are also still some real stigmas associated with suicide, as explained by Chapple et al. (2015); people are not always willing to speak up or talk about suicide (Hägstrom, 2020) particularly as an occurrence in their own family. This meant that there were some generalizations that cannot be supported by the data.

Within the limitation of small sample size, there was another consideration of the recruitment process solely relying on participants' referrals. Respondent-driven recruitment is useful and acceptable in research attempting to access populations that are specify or hard to access (Heckathorn, 2011). This reliance created a chance for

homogeny and bias in the reported information (Gile & Handcock, 2010). The results may have been different if the participants were obtained by other means or locations. In acknowledging all the limitations realized in this study, there is a reasonable expectation that this study in diverse settings could be replicated and yield more generalizable results.

Recommendations

Due to the reliance on participant referrals, there was a chance for the themes being due to the dentist having similar demographics, which may or may not skew findings. As identified in Chapter 1, in choosing dentists from a local vicinity, there was the possibility that there may have been patterns that emerged that may have come from the dentists having similar affiliations, relationships, and backgrounds. There is also the chance for the participants to have similar answers as they may know each other and may discuss the suicides and attempt to find commonalities in their losses. These events can then be reported in the interviews and may not totally represent the true issues that may have presented in the dentist. In future research settings not impacted by social distancing practices associated with COVID-19, there should be more diversity in participant selection, perhaps to expand to a regional area or nationally.

The main recommendation for this study is based on the participant sample size for the study, which may be an opportunity for a variation in methodology for this type of study. One recommendation is that a case study approach be used to look at one to two cases for a more intense analysis of the perspective of multiple persons focused on the same instance of suicide. This approach could also be used to interview multiple family members of the same decedent to determine how perceptions differed among the

participant. A case study focuses on more detail within the analysis of a phenomenon, using multiple data collection methods with a significantly smaller sample size (Njie & Asimiran, 2014; Yin, 1981). The benefit of the case study is that there is opportunity for empirical inquiry that explores a current phenomenon in real-time context, particularly when there is some blur as to where the boundary in context and the phenomenon may lie (Njie & Asimiran, 2014). This is based on several factors that impacted the study as identified in the literature review. First, there is limited empirical research on the subject on dentists' suicide related to occupational stressors. Secondly, the detailed exploration of a singular case will allow other impacting factors to be explored in greater depth; this would include hereditary influences and previous suicide attempts.

There was one demographic observation that was identified in the data which was that all the dentists who committed suicide were males who were in the baby boomer generation. This generation is classified by individuals born between 1946 and 1964 (Venter, 2017; Winefield, O'Dwyer, & Taylor, 2016). P-1 reported "We were married forty-five years; he was a dentist forty years." P2- stated that his father "Was involved in dentistry in the military, and went to dental school after that, so about 40 years when he died." P-3 recalled that her husband "Finished dental school in 1983 and was a dentist for about thirty-five years." P-4 stated "[My uncle] was in his fifties when he died, he had been a dentist for nearly 25 years at that time." There is research that reported that men have a higher rate of suicide (Chatterjee, 2018) and at present account for about 75% of all suicides (Standish, 2020). I believe it may be significant to note that there may be

some connection to gender and generation and the commission of the suicide. This would present a topic that would be worth empirical exploration in future research.

Implications

This study adds another layer to what is known about suicide. In conducting the exploration of suicide in specific groups, this research can expand the acceptability for the use of qualitative methods as the choice to explore suicide. As previously indicated, there has been a historical tendency to lean towards quantitative methods to empirically study suicide (Doucerain et al., 2016). The current study operated on a stance of the importance of the perceptions of family members, which adds weight to the critical need for more qualitative studies on suicide. This study has the potential to add to the empirical research that can validate the use of qualitative methods in collaborative interdisciplinary research that can provide more information on and help solve issues pertaining to suicide (Green & Johnson, 2015).

Additionally, this research substantiated what previous research has found that there is still no single factor that can be pinpointed as the cause for suicide (AFSP, 2016; Tucker et al., 2015); however, there do seem to be definitive patterns that lead to the act of suicide. This study helped to explore suicide causation in identifying precursor events that took place prior to the suicide. In further identifying those patterns preceding suicide, this study has the potential to help substantiate what is known and unknown about events leading to suicide. Through further providing substantiation of the experiences that lead to suicide, this study adds depth to the topic of suicide reduction. There is an expectation of an increase in suicides post COVID-19 (Bach, 2020; Standish,

2020; Vitelli, 2020), which intensifies the importance of being able to understand and identify the constructs and occurrences that may lead to suicide. This foreshadowing of a rise in suicide rates further shows how important it is for others to be able to recognize suicide warning signs and precursor events in others. This study has the potential to empirically support initiating primary interventions that focus on pattern recognition of certain precursor events from an earlier onset. This can impact social change starting from an individual level, which can then be generalized to fit various populations and become seminal in changes being prioritized at the organizational, societal, and legislative levels. The resulting panoptic view of suicide can lead to increased knowledge, reduced stigma, and normalization of seeking help.

Conclusion

The potential to change how suicide risk is identified and subsequently decreased is founded in the expansion of current and relevant new research. This study can add to that base and serve as a springboard for future research expanding what was identified in this study to larger populations. This study aimed to contribute meaningful information to help expand the understanding of how family members perceive what led to suicide in dentists. It was shown that stress is observable, and in hearing the perspectives of family members' perceptions of stress, the prevalence of suicide events can be understood and identified. These precursor events were not specific to dentists but pointed to common characteristics that may seem to imply an illusion of correlation in increased rates of suicide for individuals employed in that occupation group. This research spotlighted how current and future researchers should approach the development of suicide education and

reduction initiatives. The view of suicide risk using new methodologies broadens the empirical understanding of suicide. Human service professionals, acting as agents for change, can use a scholar-practitioner model in community settings to further previous steps towards a direction of social change.

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Appendix A: Recruitment Flyer

STUDY PARTICIPANT FLYER

- **ARE YOU A RELATIVE/FAMILY MEMBER OF A DENTIST WHO HAS COMMITTED SUICIDE?**
- **ARE YOU OVER 18 YEARS OLD?**
- **ARE YOU ABLE TO DO A 60 to 90 MINUTE INTERVIEW?**
- **PARTICIPANTS WILL RECEIVE A $15 WAL-MART or TARGET GIFT CARD.**

My name is Lillian Williams, and I am a current student at Walden University, working on my Ph.D. in Human and Social Services. I have worked in the dental field in varying capacities for almost 20 years. I am currently working on a research study in which I would like to gain more understanding on the ways stress from being a dentist may have impacted your family member's occurrence of suicide. If you are interested and willing to participate in my study, please contact me for more information. Thank you for your consideration.

CONTACT: Lillian Williams

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RESOURCE GUIDE

Center for Care and Counseling for the CSRA
706-305-3134
www.centerforcareandcounseling.org
This agency offers a wide range of counseling services to families, couples, individuals, adolescents and children.

Family Counseling Center of the CSRA
706-868-5011
www.fcccsra.org
This service is a private, non-profit, non-secretarian agency that provides professional counseling services to retired, active service military, and all residents of CSRA regardless of ability to pay.

Griefnet.org
737-417-8833
www.griefnet.org
This global agency offers grief support groups that operate 24-hours daily, 365 days/year. $10 per month per group requested, but sliding scale fees available. Multilingual options available.

National Suicide Prevention Lifeline
800-273-8255
www.suicidepreventionlifeline.org
This is a free 24-hour emergency telephone information service that provides free and confidential emotional support to people in suicidal crisis or emotional distress. Multilingual options available.

Appendix C: Interview Guide

Interview Guide

For Participants Who Have Completed Consent Form Only

Thank you for agreeing to participate in my research. While I understand this is a difficult topic to discuss, I appreciate your willingness to help with this study.

Section A –Preliminary Information (Ice breakers, to build some rapport/trust)

1. Tell me about yourself
2. How did you hear about this study?
    A. Why did you agree to participate in this study?
3. Has it been difficult for you to talk to others about your loss? Why?
4. Have (or why) you sought support following your loss? *If not addressed above*

Section B – Information related to the decedent

5. What was your relationship with the decedent?
6. Tell me about decedent, what were they like (personality)?
    A. Can you tell me your impression of how they felt about their job?
    B. Can you describe what a typical work week was like?
    C. Can you talk about decedent's stress related to their job?
        - Did decedent seemed burned out, overwhelmed by work?
        - Can you tell me more about how you knew that?
    D. Was there any event or something significant that you feel may have happened to them before they took their life?
        - How do you think decedent's occupation factored into their suicide?
    E. Are there any other factors or events you feel impacted the occurrence of suicide?

- Pain, illness, life change etc.

Section C – Information on the Study of Suicide

7. How would stress management, coping skills and similar programs implemented at the curriculum development level or as a mandated CE requirement help in suicide reduction?

8. How important is it to have an understanding on suicide (its warning signs, triggers, factors which influence the level of occurrence etc.)?

    - How could that information help people?

Last Question:

9. Is there anything additional that you would like to add before we complete this interview?

Debrief

Thank you very much for taking the time to complete this interview with me. While I know the topic may have been difficult, your time and your story are very important. Thank you for sharing that with me. The next steps for this research project will be for me to transcribe the audio recording into a document. Once that is done, I will send you a completed copy for your review and approval before I use any of the data in my analysis. Do you have any questions for me before we end this interview?

*Remind participant of the university participant advocate and contact information in case they need to contact them.

*Provide participant of community resource guide information

*Provide gift card for participation