University of Nevada, Reno

An Exploration of Eating Disorders (Diabulimia) Associated with Type 1 Diabetes.

A thesis submitted in partial fulfillment of the requirements
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By

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ABSTRACT

Incidence of type 1 diabetes continues to increase, the Juvenile Diabetes Research Foundation estimates prevalence will raise from 20% to 23 % between 2001 and 2009 (Juvenile Diabetes Research Foundation [JDRF], 2015). Those diagnosed with type 1 diabetes are at risk for body image disorders due to the increased storage of fat in relation to insulin administration. This association can result in the development of an eating disorder in which insulin administration is reduced or eliminated in efforts to control weight (Hasken, Kresl, Nydegger & Temme, 2010). The afore-mentioned condition is known as diabulimia; however, this term is not currently recognized in the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013). Diagnosis and treatment of diabulimia is difficult for the primary care provider due to lack of an acceptable diagnosis as well as vague presentation of symptoms. A more holistic understanding of diabulimia and the effects on those with this disorder will aid providers in the complex management of diabulimics.

The purpose of this phenomenological study was to explore, describe, interpret and gain a deeper understanding of the lived experience of individuals with diabulimia. Van Manen's six activities of qualitative inquiry guided this study. A purposeful sample of 2 participants was recruited for this study and despite aggressive recruitment techniques no further participants were included in the study. Semi-structured, face-to-face, audio recorded, interviews were conducted. Colaizzi's 7-step approach was utilized for data analysis. Similarities between participant interviews revealed five common themes and two subthemes which include; (1) mixed messages, (2) management of

diabetes, (3) negative effects, (4) diabulimia as an escape/addiction, and (5) barriers to care with the subthemes of (1) lack of facilities and (2) lack of provider knowledge. Knowledge ascertained from this study will allow health care providers to offer a more holistic approach to care for the diabulimic population.

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CHAPTER I

INTRODUCTION

Background and Significance

Diabulimia is not yet an approved diagnosis in the *Diagnostics and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013), making diagnosis and treatment of this disease difficult. Diabulimia occurs when type I diabetics reduce or omit insulin as a means of weight control. Of individuals with type I diabetes, the incidence of omitting insulin in attempt to lose weight varies from 5% to 30% (Goebel-Fabbri et.al, 2008; Hillege, Beale, & McMaster, 2008; Ruth-Sahd, Schneider, & Haagen, 2009). Type I diabetics have more difficulty controlling their weight because administration of insulin prompts the body to store fat. The association between administration of insulin and weight gain can result in insulin reduction in efforts to control weight (Hasken, Kresl, Nydegger & Temme, 2010).

The body uses insulin in the conversion of glucose into energy. When insulin is not available and glucose cannot be converted, proteins and fats are broken down to be used as alternative energy sources (Hasken et al., 2010). This process can result in weight loss; however, the consequences of restricting insulin are well documented. Consequences from insulin reduction are due to the resulting poor metabolic control. This has both acute and chronic effects on the body. Acute complications are seen in the form of hyperglycemia, leading to dehydration and electrolyte imbalances; lipid catabolism, leading to ketoacidosis; and weight loss. Complications from chronically elevated blood sugar levels are seen in the form of microvascular changes (i.e. eyes and periphery) (Larrañaga, Docet & García, 2011). In diabulimics, because the blood sugar

changes are so varied, they are at an increased risk for microvascular complications such as eye disease, renal failure, and peripheral neuropathy as well as macrovascular complications such as heart attacks and strokes (Mathieu, 2008). Wilson (2012) found 10 out of 15 subjects admitted to restricted insulin intake as a weight loss strategy. Early onset diabetic complications as well as a reduced quality of life were reported by all 10 subjects who participated in diabulimia. Insulin restriction has been shown to increase morbidity and mortality of individuals with type I diabetes (Goebel- Fabbri et.al, 2008). Results of an 11 year cohort study of 234 women by Goebel-Fabbri et al. (2008) report that the mean age of death was 48 years, in the group reporting insulin restriction, versus 58 years in those who did not misuse insulin.

Diagnosis of diabulimia can be difficult due to the nonspecific presentation. A patient may present with headache, decreased concentration and lethargy as examples of nonspecific complaints (Ruth-Sahd et al., 2009). Key symptoms that may trigger a diagnosis of diabulimia include frequent episodes of diabetic ketoacidosis, poorly controlled glucose levels, significant weight loss without underlying illness, anxiety surrounding food or weight, and a delay in puberty or growth (Yan, 2007). Upon diagnosis, treatment must be multidisciplinary involving medical, nutrition and dietary professionals (Mathieu, 2008). Outpatient management should include weekly meetings with a mental health provider (Goebel-Fabbri, Uplinger, Mangham, Criego & Parkin, 2009). The advanced practice nurse needs to take this information into account when caring for patients with type I diabetes.

Problem Statement

Currently, there are approximately 3 million type 1 diabetics in America, with an increase in prevalence from 20% to 23 % between 2001 and 2009 (Juvenile Diabetes Research Foundation [JDRF], 2015). As the incidence of type 1 diabetes increases so does the risk for diabulimia. Misuse of insulin, seen in diabulimia, leads to earlier onset of diabetic complications. While there is some research providing information regarding the exacerbation of diabetic complications in and treatment of diabulimia; research remains limited in other topics related to diabulimia, such as reliable screening tools and an explanation of the mental health aspect related to diabulimia. A deeper understanding of diabulimia, as an eating disorder, and associated management of type 1 diabetes is necessary for the primary care provider.

Purpose of Study

The purpose of this phenomenological inquiry is to describe, interpret, and gain a deeper understanding of the development of eating disorders (diabulimia) and their association with type 1 diabetics. This qualitative study contributes to existing research that is lacking in a deeper understanding of diabulimia and the contributing eating disorder. This study will benefit all primary care providers by offering a deeper understanding of diagnosis and management of diabulimia. In addition, this study will benefit those diagnosed with diabulimia by increasing awareness of their disease process.

Research Question

The main question that guided this study was: What is the lived experience of those affected by diabulimia?

Chapter Summary

This chapter provided the background and significance of diabulimia and related health care concerns. Included is the purpose of the study along with the research question that guided this phenomenological inquiry to better understand the lived experience of those with diabulimia. Chapter II provides a discussion and analysis of the current literature.

CHAPTER II

LITERATURE REVIEW

A computerized literature review was completed using the most common research databases CINHAL, Pub Med, Academic Search Premier and Google™. Key words included diabulimia, diabetes type 1 and eating disorders. The review of literature resulted in 17 journal articles from 2007 through present date that proved to be relevant to the topic of interest. Journal articles obtained during the search focused on defining diabulimia, discussing prevalence of diabulimia, triggers of diabulimia, consequences of diabulimia and management of diabulimia.

Defining Diabulimia

The term "diabulimia" is not currently an approved diagnosis in the Diagnostic and Statistical Manual of Mental Disorders (DSM) (Ruth-Sahd et al., 2009). Diabulimia is recognized in the DSM IV under the "eating disorders not otherwise specified" category (Darbar & Mokha, 2008); however the term itself is not considered diagnostic. The updated DSM V continues to lack the term "diabulimia" although the DSM V does mention individuals with concurrent type 1 diabetes and bulimia may omit or reduce insulin doses during periods of binging to reduce metabolism of food. The DSM V also includes "misuse of medications to influence weight" under the heading "other specified feeding or eating disorder" (American Psychiatric Association, 2013). A diagnostic criterion for the disorder is also lacking (Davidson, 2014). This same author defines diabulimia as intentionally reducing or omitting insulin doses for the purpose of losing weight. A more rigid definition of diabulimia has been proposed as a reduction of insulin

twice a week or more or a reduction of greater than 25% of prescribed insulin dose with the intent of losing weight for more than three months (Shih, 2009).

Prevalence of Diabulimia

Diabulimia is linked to type 1 diabetes, as such increases in rates of type 1 diabetes lead to increased risk of diabulimia. Yan (2007) reports an estimate of 450,000 women partaking in diabulimia in the United States. The incidence varies from 5% to 30% (Goebel-Fabbri et.al, 2008; Hillege, Beale, & McMaster, 2008; Ruth-Sahd, Schneider, & Haagen, 2009). Incidence is noted to be increased in the adolescent and young adult population to 30% to 40% (Hasken et.al, 2010). Prevalence of the disease is frequently reported in the female population with a lack of research and data speaking to males, who may also be affected by diabulimia (Davidson, 2014). Variation in reported prevalence is most likely due to a lack of valid screening instruments. Generic eating disorder questionnaires, such as the Eating Disorder Examination Questionnaire (Cooper & Fairburn, 1987), the SCOFF questionnaire (Morgan, Reid & Lacey, 1999) which asks: Do you make yourself **S**ick because you feel uncomfortably full? Do you worry you have lost **C**ontrol over how much you eat? Have you recently lost more than **O**ne stone in a 3 month period? Do you believe yourself to be **F**at when others say you are too thin? Would you say that **F**ood dominates your life?, the Eating Attitudes Test (Garner & Garfinkel, 1979) and the Diabetes Eating Problem Survey (Antis del, Laffel & Anderson, 2001) are unlikely to detect insulin restriction. The revised Diabetes Eating Problem Survey (DEPS-R) (Markowitz et al., 2010) is the first questionnaire to screen for insulin misuse for weight loss purposes. A study conducted in Norway found good internal consistency (Cronbach alpha of 0.89) when using DEPS-R as a screening tool for

identifying insulin restriction (Wisting, Froisland, Skrivarhaug, Dahl-Jorgensen & Ro, 2013). A simple screening question of "I take less insulin than I should" has been proposed by others to screen for diabulimia (Goebel-Fabbri et al., 2008). Another factor making the detection of diabulimia difficult is the fact that insulin omission at times may be unintentional or due to outside factors, such as inability to pay for medication (Davidson, 2014). A distinguishing element of diabulimia is focus on weight loss as a consequence of restricting insulin (Mathieu, 2008). Vague presentation of diabulimia can complicate diagnosis as well. Initial presentation of diabulimia may include nonspecific symptoms such as lethargy, headache, and decreased concentration (Ruth-Sahd et al., 2009). Diabulimics may seek medical attention for problems relating to the complications of diabulimia, such as abdominal discomfort, esophagitis or dysphagia, rather than for the diabulimia itself (Haske et al., 2010). Symptoms such as hyperglycemia, fluctuations in weight, unusual behaviors toward and obsession with food, binge eating of carbohydrates, hiding food or eating habits and a ketotic smell on the breath or in the urine are more specific to diabulimia. One distinguishing feature of diabulimia is the patient's focus on weight loss and obsession with body image (Mathieu, 2008). Patients experiencing diabulimia may have normal weight, as well as be overweight or underweight (Shih, 2009).

Triggers of Diabulimia

Some patients with diabulimia have an eating disorder that is present prior to the diagnosis of diabetes. Other patients associate the initial weight gain with insulin administration once treatment of diabetes is initiated following diagnosis, which then prompts the insulin misuse (Mathieu, 2008). The education and resulting careful

attention to food, eating behaviors, regular exercise, frequent blood sugar monitoring, and signs of hypoglycemia that are an integral part of diabetes treatment can also lead to obsession with food and weight within this population (Goebel-Fabbri et al., 2008). Diabulimia can also be brought on by something as simple as reading about weight loss following insulin restriction in a book (Blanchard, 2008). Balfe et al. (2013) found that the majority of those studied who partook in diabulimia came across the association between insulin misuse and weight loss in an accidental fashion. Furthermore, some may manipulate insulin as was way to take back control of their diabetes and regain a feeling of command (Mathieu, 2008; Yan, 2007).

Complications of Diabulimia

Misuse of insulin, results in a state in which the body is unable to convert glucose to energy. The body then seeks energy from fat stores, resulting in weight loss (Darbar & Morha, 2008). The average blood sugar at which glucose is excreted in the urine is above 160 to 180 mg/dL (Shih, 2011). The buildup of excess glucose within the blood results in long term complications. Macrovascular complications including coronary arterial disease, peripheral vascular disease and stroke are seen as a result of insulin misuse. Microvascular complications that occur as a result of diabulimia include retinopathy, nephropathy, neuropathy and cardiovascular disease. Elevations in blood sugar can also lead to irregular menstrual cycles or amenorrhea in adolescents, this delay of puberty can result in abnormal function of the brain (Shih, 2009). These complications are seen more frequently and with an earlier onset in those who restrict insulin (Ruth-Sahd et al., 2009). Goebel-Fabbri et al. (2008) found an increased mortality in the population who misuse insulin, where the relative risk of death was increased by 3.2 times. A cohort study

conducted by Wilson (2012) revealed all participants who misused insulin for the purpose of weight loss regretting this decision. Further examination of those reported feelings of regret, found participants stating a lack of awareness of the complications related to the elevation of glucose levels at the time of insulin misuse; however, they currently realize their chronic diabetic complications are resulting from poor glycemic control related to insulin misuse. Participants also reported their chronic medical conditions affected their quality of life to some degree.

Treatment of Diabulimia

Those suffering from diabulimia report a lack of knowledge and understanding regarding the disorder. Most frequently patients with diabulimia are treated at eating disorder facilities, where emphasis is not placed on the concurrent diabetes diagnosis. There is also a lack of support and feelings of isolation for those suffering from diabulimia (Brown, 2014). Finding practitioners who are experienced in the realm of diabulimia is also difficult (Blanchard, 2008). Treatment of diabulimia must be multidisciplinary with an initial goal being medical safety (Goebel-Fabbri et al., 2009). Frequently the patient must be stabilized and treated for ketoacidosis in an acute setting before treatment of the diabulimia can begin (Ruth-Sahd, Schneider, & Haagen, 2009). Goebel-Fabbri et al. (2009) state, that a minimum requirement for outpatient treatment of diabulimia is a demonstration of commitment to routine basal insulin administration in order to prevent ketoacidosis. The team should include an endocrinologist, a registered nurse, a registered dietitian with eating disorder and/or diabetes training, a social worker, and possibility a psychiatrist. The goals of treatment should be outlined with both long term and short term goals in mind.

Chapter Summary

Understanding the lived experience of those affected by diabulimia gives insight into the challenges and emotions faced by this population. Current research focuses on defining diabulimia and its complications as well as current recommended treatments for the disorder. However; there is lack of research that focuses on the lived experience of those diagnosed with diabulimia.

CHAPTER III

METHOD OF INQUIRY: GENERAL

The methodological approach for this study is phenomenology. A general overview of this methodology is presented within this chapter. Applied methods will be visited in Chapter IV.

Phenomenological inquiry is defined as a research approach examining the lived experience of a population. The main assumption of this approach is that within all populations there is an essence or "an essential and variant structure" that can be both perceived and understood by a researcher (Polit & Beck, 2012, p.490). Hermeneutics, a closely related strain of research, identifying the perceptions of a population as rooted within a variety of context and focuses on the meaning and interpretation of these experiences (Polit & Beck, 2012).

According to van Manen (1990), phenomenology strives to answer the question of "What is this or that kind of experience like?" (p.9). Phenomenology diverges from other research methodologies in that it searches for critical truths in subjective experiences through interpretation and understanding rather than simply defining what is seen (van Manen, 1990). Gadamer (1976) acknowledges the need for the phenomenologist to explore the participant interview from a general perspective as well as identifying findings within parts of the text, also known as the hermeneutic circle.

History of Phenomenology

German philosopher Edmund Husserl is considered the founder of phenomenology. Its basis as research design began in Germany prior to World War I. Descriptive or eidetic phenomenology is strongly influenced by the work of Husserl. The

aim of descriptive phenomenology is to explore broad experiences rather than individual experiences and to ask about the meaning of these experiences (Giorgi, 2008). Interpretive phenomenology, an extension of Husserl's work completed by his student Martin Heigegger, stressed the need for interpretation and understanding not just the description of the experience (Polit & Beck, 2012). Also known as hermeneutics, this approach differs from that of Husserl's descriptive phenomenology by rejecting the use of bracketing. Bracketing is approaching one's research with an acknowledgement of preconceived notions about the experiences of the population being studied (Polit & Beck, 2012). Max van Manen offers a contemporary approach to interpretive phenomenology by emphasizing the study of the lived experience as well scientific interpretation (Dowling, 2007). The research approach of van Manen (1990) includes six distinct research activities: "(1) turning to a phenomenon which seriously interests us and commits us to the world; (2) investigating experience as we live it rather than as we conceptualize it; (3) reflecting on the essential themes that characterize the phenomenon; (4) describing the phenomenon through the art of writing and rewriting; (5) maintaining a strong and oriented pedagogical relation to the phenomenon; and (6) balancing the research context by considering parts and whole" (p.30). The methodological approach presented here is guided by these six principles.

Phenomenological Activities Guiding this Study

The first activity described by van Manen (1990) is *turning to a phenomenon which seriously interests us and commits us to the world* is an essential part of a phenomenological inquiry. This researcher's interest in the subject is rooted in her own lack of knowledge about the subject. Given the opportunity to care for type 1 diabetics

throughout her nursing career this researcher desired to further understand the struggle that afflicts those diagnosed with type 1 diabetes. Upon discovery of the co-occurring eating disorder with type 1 diabetes this researcher desired to explore this phenomenon further. The goal of this study is to gain deeper understanding of the experience of those with diabulimia and use that understanding to increase knowledge of the disorder.

The second activity, *investigating experience as we live it rather than as we conceptualize it,* challenges the researcher to immerse him or herself in the phenomenon that is being studied (van Manen, 1990). This allows for a deeper understanding of the lived experience. Writing, interviewing and observation make up three suggested ways of collecting data. Interviewing offers a unique opportunity for the researcher to discover a deep understanding of the phenomenon while also creating a dialogue about the meaning of the experience between the researcher and the participant (Earle, 2010). This researcher will use conversational interviewing in conjunction with observation to develop a deep understanding of the experience as lived by the participant.

In the third research activity van Manen (1990) calls upon the researcher to *reflect on essential themes which characterize the phenomenon.* The themes that are uncovered give structure to the phenomenon. Reflection allows the researcher to determine if a theme is essential to the experience or an incidental finding, which enhances the meaning of the experience. Identification of common themes and selection of relevant phrases allows for the researcher to capture the meaning of said theme (Earle, 2010). This researcher will identify and analyze themes found among those with diabulimia and as such, gain a richer, deeper understanding of the nature of the participant's lived experience.

In the fourth activity, the researcher is asked to describe the phenomenon through *the art of writing and rewriting* (van Manen, 1990). Through the process of writing and rewriting, the themes that give structure to the phenomenon are revealed and thus the true meaning of the lived experience can be discovered (Earle, 2010). This process allows the unique experiences of each individual participant to be examined and understood.

The fifth activity is *maintaining a strong and oriented relation* (van Manen, 1990). This forces the researcher to obtain the strongest possible interpretation of the phenomenon by utilizing his or her awareness of the lived experience (Earle, 2010). In having no personal experience with the phenomenon of interest, this researcher is able to remove bias and obtain a rich, deep text by externalizing the lived experience of the participants.

Balancing the research context by considering parts and whole, is the sixth and final research activity postulated by van Manen (1990). In this activity the researcher is encouraged not to focus on specific details of the methodology until the study is completed. The researcher must examine how each part contributes to the overall experience in order to gain a deeper understanding of the phenomenon. By maintaining openness to the experiences of participants the researcher is able to understand the power of the text through the participant's experiences.

Research Plan

Participant Selection

Qualitative research is defined as the investigation of phenomena, using an in-depth and holistic fashion, through a collection of rich narratives utilizing a flexible research design (Polit & Beck, 2012). Research is conducted with participants who have

first-hand knowledge of the phenomenon. The inquiries seek to understand the real-life experiences of participants and typically take place in a naturalistic setting (Polit & Beck, 2012). Purposeful sampling is utilized to recruit individuals who share the lived experiences associated with this study in order to provide adequate descriptions of their unique personal experiences (Ayres, 2007). Qualitative research does not have fixed rules for sample size; instead size of the sample is based on informational need. A guiding principal in sample size is data saturation, which occurs when no new information is obtained from subsequent interviews and redundancy is achieved (Polit& Beck, 2012). Specific criteria and method of purposeful selection are discussed further in the following chapter.

Data Generation and Analysis Procedures

Data Generation

The interview process is a common method of data collection in qualitative research, as it allows for in-depth examination of meaning and processes. Development of trust between the interviewer and interviewee is paramount in order to obtain quality data. While a one-on-one interview can be viewed as a social interaction, it is important to note that the relationship is not equal. In order to shift the balance of power, it is helpful for the researcher to maintain a relaxed, confident, and attentive demeanor. Creation of a comfortable interview atmosphere will also help to ensure ease of the interviewee. Active listening is vital component to an interview, which is communicated through both verbal and non-verbal cues on the part of the researcher (Ryan, Coughlan & Cronin, 2009).

Phenomenological qualitative data collection requires in-depth interviews with participants who have first-hand knowledge and experiences of the phenomenon of inquiry (Polit & Beck, 2012). The purpose of the interview is to gain a deeper knowledge of the participants' emotions and perceptions about their diabulimia. Consistent topics are discussed utilizing a semi-structured interview approach, utilizing an interview guide. Semi-structured interviews allow the researcher to obtain required information while allowing the participant to talk freely about topics on the guide. Avoidance of closed ended questions allows the participant to tell their story in his or her own words (Polit & Beck, 2012).

Analysis Procedures

Data analysis is the process of sorting and classifying collected data. In qualitative research, this process begins during the interview itself. The process of data analysis is time consuming and requires the researcher to be immersed in the data. The researcher must also closely examine new data to determine how it binds with the existing analysis (Green et al., 2007). The three techniques, suggested by van Manen (1990) to uncover themes within data are; the holistic approach, the selective reading approach, and the detailed reading approach. These techniques are incorporated through use of active listening and observation during the interview process and reading and re-reading interview transcripts while identifying themes that characterize the phenomena. Utilizing the 7-step method data analysis as described by Colaizzi (1978) allows the researcher to appreciate themes essential to this phenomenon. Colaizzi's method is as follows:

1) Read all transcripts to acquire a feeling for them and to make sense out of them. The goal of a phenomenological study is to understand and interpret the human experience. In doing this the researcher must enter another individual's world to discover practical wisdom, possibilities and understandings that may be uncovered there (Polit & Beck, 2012). Use of audio recordings allow for accurate collection of data. Transcription allows for the process of reading and re-reading by the researcher. Utilizing the holistic approach suggested by van Manen (1990) along with careful review of the transcripts allows the researcher to appreciate the whole value of the content within each interview.

2) Review each transcript and extract significant statements from them. The selective reading approach suggested by van Manen (1990) is utilized to identify pertinent statements and themes that are essential to the phenomenon of interest. Elimination of repetitive statements, as suggested by Colaizzi (1978) allows for specific statements to create a more general formulation.

3) Meanings are formulated from significant statements. The researcher must examine the words and specific statements made by participants in order to further examine the phenomenon of interest. Close examination of each sentence or sentence cluster, as suggested by van Manen's (1990) detailed reading approach, allows the researcher to interpret and understand the experience of the participants.

4) Formulated meanings are organized into themes and theme clusters. Through repeat examination of the data, categories of similar data are created. This allows for creation of theme clusters. Most frequently, participants will have different and unique experiences which will create contradictions and exceptions which will be placed into

different categories, offering an explanation for all data that is recorded (Green et al, 2007).

5) Integrate results into an exhaustive description of the phenomenon under study. Integration of themes requires moving beyond a simple description of the theme into an explanation, or if possible an interpretation of the phenomenon (Green et al, 2007). This step allows the researcher to grasp the whole essence of the lived experience by closely examining commonalities within individual participant descriptions.

6) Formulate an exhaustive description of the phenomenon under study in as unequivocal a statement of identification as possible. Recognizing that phenomenological research cannot be separated from the practice of writing, as it is through the writing of the results that a researcher will actively participate in the struggle to understand and recognize the meanings of the lived experience (Polit & Beck, 2012).

7) Validation is sought from the participants to compare the researcher's descriptive results with their lived experience. In Colaizzi's last and final step the researcher returns to the participant to allow for review of transcripts and themes. This ensures accuracy and validation of the data by the participant, while offering the possibility of clarification and elaboration by the participant.

Ensuring Trustworthiness

Trustworthiness is utilized in qualitative research to parallel standards of reliability and validity seen in quantitative research. The concept of trustworthiness is comprised of several dimensions, those being credibility, dependability, confirmability and transferability (Polit & Beck, 2012). Lincoln and Guba (1985) outlined these four essential criteria for obtaining trustworthiness within a qualitative study. Credibility is

viewed as the internal validity of the research. Credibility is achieved through two means: the first being, conducting the study in a way that enhances the believability of the findings and the second involves taking measures to demonstrate credibility in research reports. Dependability refers to the ability to achieve the same results over a period of time. Dependability is necessary for the achievement of credibility. Confirmability equates to objectivity. This questions whether findings would be similar among two or more independent researchers' review of data. Confirmability is achieved when the findings are reflective of the participants' experiences, not the perspectives of the researcher. Finally, transferability refers to the ability to achieve the same results within alternative settings or groups (Polit & Beck, 2012).

Chapter Summary

This chapter began with a history of phenomenological research and its importance as a methodology for qualitative research. A general overview of this methodology was provided. A description of van Manen's approach to research of the lived experience utilizing Colaizzi's steps of data analysis and the process for data collection and management were explained. Finally, a description of ensuring trustworthiness within the study was provided.

CHAPTER IV

METHOD OF INQUIRY: APPLIED

Sample Participant Recruitment and Selection

Participants who were knowledgeable in the content of this study were self-selected through purposeful sampling. The goal of purposeful sampling was to obtain a group of participants who are representative of a broader group within the dimension of interest and allow for possible comparisons across the different types of cases within the dimension of interest. This allowed the researcher to investigate the real life experiences of those familiar with the phenomenon in question. The goal was to recruit participants until saturation of the data had occurred. Data saturation occurs when interviews reveal no new information and redundancy is achieved (Polit & Beck, 2012).

The inclusion criteria for this study were: At the time of recruitment the participant must have been an English speaking adult, who had been diagnosed with type 1 diabetes and a co-occurring eating disorder. Adults who did not have type 1 diabetes and a co-occurring eating disorder were excluded from participation in this study.

Participants had to agree to a face-to-face, audio taped interview, which was conducted at a private location mutually agreed upon by the researcher and the participant. Participants also had to agree to follow-up communication via face-to-face, telephone, or mail for review of their narratives. Each participant was provided a copy of their transcription for review. This allowed the participants to make any corrections, clarify any points, and ensure accuracy of their experience. Participants were asked then to provide any additional thoughts on their lived experience with diabulimia.

Gaining Access

Protection of Human Subjects

Approval of this study was sought from and approved by The Institutional Review Board (IRB) for the University of Nevada, Reno (Appendix A). Additionally, approval from the participating facility was sought and obtained (Appendix B).

Recruitment

Following approval from the IRB and participating facility, recruitment flyers (Appendix C) and letters (Appendix D) were included in admission paperwork of individuals who met the inclusion criteria for this study. Interested participants contacted the researcher through a liaison at the center to allow for interviews to be scheduled at a time of their convenience. The researcher determined inclusion criteria, further explained the purpose of the research, structure of the interviews, maintenance of confidentiality, consent to audio-taped interviews, transcription of the data verbatim, handling of the data, reporting of the data at the end of the research, and answered any questions the participant may have had regarding the research. This information was included in the consent form (Appendix E). All participants were informed that participation in this research study was completely voluntary and that they may refuse participation or withdraw from the study at any time without penalty or risk. All participants who met the inclusion criteria were treated fairly, equally, and without discrimination.

Privacy and Confidentiality

All of the information obtained in this study was and continues to remain confidential. Participants were given a pseudonym and any identifying information was removed from the transcripts to maintain confidentiality. In the researcher's field notes

and transcripts, the participant was referred to by their pseudonym. A key for participant contact information and the recorded interviews were stored in a locked file cabinet accessible only to the researcher. A confidentiality statement was signed by the transcriptionist who had access to the interview data (Appendix F).

All information including recorded interviews, demographic data and consent forms will be stored in accordance to IRB protocols. At the completion of the storage time, the material will be destroyed, following IRB protocol.

Consent

Consent forms were developed in accordance with the requirements of the participating university's IRB. The consent form included the purpose of the research and a discussion of the inclusion criteria. It was made clear that participation in the study was on a volunteer basis and that the participants could withdraw from the research at any time, should they choose. Research procedures were clearly stated, along with the details related to the maintenance of confidentiality and the risks and benefits of participation. All participants completed the consent process prior to beginning the interview.

Data Generation and Analysis Procedure

Data Generation

Data for this study was collected through in-depth, face-to-face guided interviews lasting approximately 30 to 50 minutes. The interviews were conducted at an agreed upon, private location where confidentiality was maintained throughout the length of the interview. A student prepared interview guide was utilized to help facilitate the discussion (Appendix G). Initial questions included basic demographic information to

identify the age of the participants. The interviews were recorded with a digital voice recorder, transcribed verbatim by a professional transcriptionist, who signed a confidentiality statement, within a week of the interview, and reviewed for accuracy, by the researcher. In addition, a field journal containing notes was maintained by the researcher to help described aspects of the physical environment, participant body language, demeanor, dress, and other observations not discernible from the transcripts.

Data Analysis

The following techniques were utilized to analyze data obtained from the participants of this study. Data analysis was initiated by listening to the recorded interviews of each participant's experience. The verbatim transcripts were then read and re-read multiple times to analyze the data. Using van Manen's (1990) three techniques (the holistic approach, the selective reading approach, and the detailed reading approach) thematic statements were isolated from the data. These techniques were demonstrated through direct observation and listening to each participant, reading and re-reading the verbatim transcripts, and through thoughtful reflection and analysis on the emerging themes from the text. Finally, Colaizzi's (1978) 7-step approach, which operationalizes van Manen's (1990) techniques were utilized in analyzing the data.

1) Read all transcripts to acquire a feeling for them and to make sense out of them. Each interview was conducted personally by the researcher. Following each interview, the researcher reflected on the discussion and re-read the interview notes. Each recorded interview was transcribed verbatim by a professional transcriptionist who had signed a confidentiality agreement. Following transcription, the transcripts were reviewed and recorded interviews were listened to multiples times to ensure accuracy,

providing time for additional notes to be taken by the researcher. This process of immersion into the data allows for a foundation upon which the separate elements of each participant's experience can bind together to form a clearer picture of the phenomenon being studied (Green et al., 2007).

2) Review each transcript and extract significant statements from them. Utilizing the selective reading approach, as directed by van Manen (1990) the transcripts were read and re-read several times to uncover essential experiences. The transcripts were coded by hand, through highlighting, circling, or underlining and compared with the field notes from the interviews.

3) Meanings are formulated from significant statements. Following initial coding the data were reexamined to determine how the differing codes could be linked (Green et al., 2007). The detailed reading approach was utilized (van Manen, 1990) to evaluate every single sentence or sentence cluster for insightful thoughts and experiences. Analyzing the common words, phrases and thoughts allowed for the researcher to obtain a greater understanding of the phenomenon.

4) Formulated meanings are organized into themes and theme clusters. Through detailed examination of transcripts common ideas were organized into themes. Validation of these theme clusters was done by referring back to the original transcripts.

5) Integrate results into an exhaustive description of the phenomenon under study. By moving beyond a simple description of the theme into explanation or understanding the researcher was able to grasp a sense of the whole of the phenomenon (Green et al., 2007). Expression of the commonalities found within individual descriptions of the

phenomenon creates a meaningful explanation of the lived experience (van Manen, 1990).

6) Formulate an exhaustive description of the phenomenon under study in as unequivocal a statement of identification as possible. The true meaning of the lived experience and struggle to understand that meaning occurs through the writing of the results (Polit & Beck, 2012). By synthesizing the common themes and theme clusters the researcher was able to appreciate the experience as lived by the participants.

7) Validation is sought from the participants to compare the researcher's descriptive results with their lived experience. Colaizzi's last step emphasizes the importance of validating data with participants to ensure the researcher's interpretation accurately reflects the lived experience. Returning to the participants for validation of the data allowed the participants to clarify and expand where needed on their lived experience. All transcripts were provided for participant review. The participants validated the researcher's interpretation as a true representation of their lived experience.

Ensuring trustworthiness

Trustworthiness is utilized to provide validity to a qualitative study. Lincoln and Guba (1985) offer four criteria necessary to obtain trustworthiness in a qualitative study. Trustworthiness of this study was obtained through these criteria.

Credibility

Credibility is the process through which the researcher seeks to ensure the study measures what it actually intended to (Shenton, 2004). This phenomenological inquiry was conducted using the reputable qualitative research methods developed by van Manen (1990). By utilizing van Manen's approach to data collection and Colaizzi's (1978) 7-

step approach to analyzing data the researcher was able to obtain insight into the lived experiences of the participants. Validation of themes and interpretations by participants allowed for believability of findings.

Dependability

Dependability is demonstrated when the research, if repeated in the same context, with the same methods and the same participants, reveals similar results. Dependability in qualitative research is best obtained through a detailed description of the study process, which allows for future research to be conducted in a similar manner (Shenton, 2004). The processes used by this researcher were discussed in detail to allow for dependability within the study.

Confirmability

Acknowledgment of the researcher's own biases is key to ensuring confirmability. Steps must be taken to safeguard the findings of the study reflect the experiences and ideas of the participants, not the perspectives of the researcher (Shenton, 2004). In order to guarantee confirmability of the study, a detailed description of the methodology, along with ongoing reflective commentary created an audit trail. In this study, the researcher discussed with the committee chair and members, personal biases based on personal experiences with type 1 diabetics, as well as those with eating disorders. Acknowledgement of existing biases allowed the researcher to produce a text which reflective of participants' lived experience with diabulimia.

Transferability

Transferability lies in the ability to demonstrate the research findings can be applied to a wider population (Shenton, 2004). The findings of this qualitative study are

specific to those with diabulimia and their experiences with the disease. The researcher's goal was to provide a thick, rich description of the phenomena to give readers a deeper understanding of the experiences of the diabulimic.

Chapter Summary

This chapter provided the application process of van Manen's phenomenological approach to research with a description of Colaizzi's 7-steps for data analysis. The researcher identified specific areas of the study where credibility, dependability, confirmability, and transferability were demonstrated to ensure trustworthiness within the research.

CHAPTER V

FINDINGS

The purpose of this phenomenological study was to explore the meaning and significance of the lived experience of those with diabulimia. The aim of this study was to explore, describe, interpret and gain a deeper understanding of diabulimia, which will contribute to the science of nursing and medicine. The question guiding this research was: What is the lived experience of those affected by diabulimia? The following stories come from individuals who experience type 1 diabetes with a co-occurring eating disorder and the insight they share gives the reader "a view of the world in which we live as human beings" (van Manen, 1990, p. 5).

Description of the Participants

A total of two female participants were recruited and participated in this study. The ages of the participants were 21and 32. Both participants were currently undergoing treatment for diabulimia.

Data Collection

All interviews were conducted between September and October 2014. Both participants were unknown to the researcher. The interviews were held in a private location, which was convenient for each of the participants. All interviews took place in a private room at the participating facility. The chosen interview location provided a quiet, private, comfortable space for the participants. The participants sat in chairs or couches next to or across from the researcher. A "Do Not Disturb" sign was placed on the door and all cell phones were turned off or silenced to avoid distraction.

Each participant was given the consent form for review. The researcher allowed adequate time for the participant to read the consent form. The researcher then reviewed the consent form with each participant and answered any questions the participants might have regarding the consent form. The researcher reminded each participant that involvement in the study was completely voluntary and if they chose, they could withdraw from the study at any time without risk or consequences. The consent form was then signed and a copy provided to each participant.

In order to establish rapport and put the participant at ease, a time of open dialogue occurred prior to each interview. This process lasted approximately 10 to 15 minutes. Following this time of discussion the researcher announced the formal interview was about to proceed and asked if the participant was ready. When the participant acknowledged "yes" the recorder was started and the formal interview process commenced. Before ending each interview, the researcher asked, "Is there anything else you'd like to share?" When the participant indicated there was no additional information they would like to share, the researcher thanked the participant and the recorder was turned off.

The participants were contacted, after the transcripts were reviewed by the researcher, and asked to review the verbatim transcript for accuracy and to ensure the participant answered the interview questions as they intended to. Participants were provided the transcripts, with the researcher's comments and notes, and asked to review these as well as to ensure the researcher was interpreting the participants' story as they intended to tell it. Both participants who began this study completed the study.

Data Analysis

All of the digitally recorded interviews were transferred to a compact disk and given to the transcriptionist within one week of the original interview date. The transcriptionist produced the verbatim transcript of each interview and returned all materials to the researcher within 1 to 2 weeks. The data was then hand coded by the researcher using Colaizzi's 7-step method of data analysis.

Immersion

The researcher listened to each recorded interview while waiting for transcription to be completed. Notes were recorded in the field journal while listening to the recorded interview regarding any thoughts, feelings, emotions, attitudes and ideas that were identified by the researcher. In order to verify accuracy, the verbatim transcription was reviewed while listening to the recorded interviews. The process of reading and re-reading of the transcripts was then completed to allow the researcher to become fully immersed in the data. The process of immersion helped the researcher gain a deeper understanding of each individual experience.

Extraction of Significant Statements and Phrases

Two transcripts were completed yielding 12 to 15 pages of interview material for a total of 6,300 words. Through hand coding by the researcher, 758 significant words, statements and/or phrases that described the experience of diabulimia were identified. A word document was created to compile these significant statements.

Formulation of Meanings

The researcher formulated meanings for each significant word, statement or phrase. Attentive efforts were taken to ensure each formulated meaning remained associated to the participants' original thoughts and statements.

Organizing Clusters of Themes

The formulated meanings were analyzed and organized for similarities and as a result clusters of themes emerged. The themes represented the individual and group experiences of those with diabulimia. This step was validated by returning to the original transcripts to search for additional information that was not included into the developing themes.

Analysis of data revealed discrepancies and contradictions, which is a normal expectation in qualitative data according to Guba (1981). Understanding by the researcher was completed by returning each transcript to the participants. At that time the participants were asked to validate the researcher's findings in the themes and to clarify or add any additional thoughts in relation to their experience with diabulimia. Some of the following statements were made by the participants during this process.

> This looks good. It looks like everything we talked about (Amy).
>
> Seeing what we talked about is strange. I don't have anything more to add (Becky).

Returning to the participants allowed the researcher to validate that the findings were interpreted correctly and they were a true account of the participant's experience.

Essence, Themes and Subthemes

Despite aggressive recruitment techniques only two participants were able to be recruited and included in this study. The following information provided, are similarities found between their stories. For the purpose of this study, the qualitative terms of themes and subthemes are used to demonstrate the similarities found between the participants' interviews.

The researcher identified five themes, which reflected the lived experience of the diabulimic. These themes include (1) mixed messages (2) management of diabetes (3) negative effects (4) diabulimia as an escape/addiction and (5) barriers to treatment. The theme barriers to treatment, is further broken down into two subthemes, which include lack of facilities and lack of provider knowledge. Compilation of these themes and subthemes contribute to a further understanding of the essence of the lived experience of the diabulimic.

Theme: Mixed Messages

This theme was present in both interviews in regards to mixed messages surrounding food and insulin. Participants had received formal diabetes education following their diagnosis of type 1 diabetes, but related how mixed messages in relation to food and administration of insulin contributed to the development of their diabulimia. The following statements from the participants describe how mixed messages played a role in their diabulimia.

> Right from the beginning I started getting mixed messages about sugar, like you can have it—you can't have it—you should limit it (Amy).

> And I think one of the biggest reasons I have this too is just the conflicting messages on how to eat and how to take care of yourself (Amy).

> Well I always felt like really restricted, so like if I was taking my insulin I felt like I could barely eat. It felt like I could eat vegetables and low fat food and stuff so then like if I want to have um like a brownie or something … like that wasn't okay (Becky).

Theme Summary

The first theme, "mixed messages" demonstrates how the information necessary for the treatment of type 1 diabetes can lead to confusion and changes in attitudes about eating. This confusion can result in frustration for the individual and in the experience of those with diabulimia, can lead to altered insulin administration.

Theme: Management of Diabetes

This theme presented itself readily in speaking with both participants. Participants described how they mismanaged their insulin administration to control their weight. The following statements describe how participants altered their insulin intake with diabulimia.

> With the diabulimia I wasn't taking all of my insulin (Amy).

> Because it's you know food binging you're going to gain weight, but like if you weigh yourself daily you'll find that you will lose weight after you skip your insulin and you'll lose more weight the more sugar you eat. Like the higher your blood sugars go the more ketones you have the more weight you'll lose (Becky).

One participant also described how individuals with insulin pumps can alter the amount of insulin administered via their insulin pump.

> I can change that [insulin administered from the pump] hour to hour if I need to (Amy).
> Some people who have the pump manipulate it like will turn it off and stuff (Amy).

During a discussion regarding how frequently insulin doses were missed one participant responded:

> Like every day (Becky).

One participant also described infrequency with checking blood sugars while practicing diabulimia.

> I have gone through phases where I've written them [blood sugar readings] down. And then phases where I don't (Amy).

One participant discussed a lack of collaboration with her endocrinologist.

> Since I wasn't taking care of my diabetes anyway like I never did anything they said because I had an eating disorder and like um their recommendations would only be helpful if I'd been taking care of myself (Becky).

Theme Summary

The theme "management of diabetes" describes how participants alter the management of their diabetes during diabulimia. A deeper understanding of the various ways diabetes management is altered in diabulimia is uncovered in this theme.

Theme: Negative Effects

This theme emerged as participants discussed how altering insulin doses made them feel physically. The participants discussed that as their blood sugar levels increased so did the negative effects of diabulimia. The following excerpts describe the way participants felt when their blood sugars were high

> Awful. Like you can't do anything (Becky).

> When it's high it stays that way for a longer period and I feel more sick, it's just um just dehydrated, no energy, like I go to sleep and zone everything out (Amy).

One participant described the negative effects becoming more frequent and persistent:

> More recently um I've noticed that it's bugging me more, like I'm getting sick at work and stuff and at night my legs ache really bad, or they did until I came here (Amy).

This same participant described her negative effects as the reason she sought treatment:

> I was really sick. I was like at the bottom. Um I was feeling suicidal, really depressed (Amy).

Theme Summary

The theme "negative effects" describes the effects diabulimia has on the individual. This theme offers insight into how the process of diabulimia takes a toll on the individual. As the participants discussed the negative effects of diabulimia they received validation for seeking treatment for their disease.

Theme: Diabulimia as an Escape/Addiction

The theme "diabulimia as an escape/addiction" arose through conversation with the individuals. Participants describe diabulimia as an addiction, being unable to stop due to the hold the disease has over them. One participant describes how the disease is used as an escape from reality:

> Which is part of the reason I do it. You don't have to face reality (Amy).
>
> Like it's a way to cope with life for me (Amy).
>
> And it's like the reality isn't there. Where if you're depressed and sleeping all the time it's like an escape (Amy).

The other participant discusses her diabulimia as an addiction:

> I just feel like it's such an addiction, like I did it like twice when I was like you know younger and I just—that was it like—I couldn't stop myself. I felt completely out of control like I had—yeah I just—I was like I couldn't believe I was doing that and, knew how dangerous it was but like I just couldn't stop and I've been doing it for so long it's like really

> scary because like you know they're talking about all the consequences and stuff, but um when you're in your eating disorder it's like you can't get that far to like look at something like that (Becky).

Theme Summary

This theme offers insight into the mental health aspect of diabulimia. The individuals involved in this study describe how their diabulimia was used as an escape from reality and how the hold of the addiction was so strong it hampered their ability to stop manipulating insulin intake.

Theme: Barriers to Treatment

This theme became evident through conversation as a significant concern for the participants. The theme is further broken down into two subthemes (1) lack of facilities and (2) lack of provider knowledge.

Subtheme: Lack of Facilities

This theme emerged as participants discussed their multiple and previous failed attempts at treatment for their diabulimia. They describe frustration in the lack of facilities with the ability to adequately treat diabulimia. The following statements reflect this frustration.

> The tough thing is that most treatment centers don't know about diabulimia (Amy).

> And the last two said they specialized in it, but they didn't know anything and—or very little (Amy).

> When I discharged I started like an intensive outpatient program for adolescents at Kaiser and I was in that for like a year –over a year and uh that was just you know like it wasn't diabulimia, it was just any eating disorders (Becky).

Subtheme: Lack of Provider Knowledge

It also became evident that participants were frustrated with the lack of knowledge providers had regarding diabulimia. Participants described lack of provider knowledge as a barrier to receiving proper care. The following excerpts demonstrate this frustration:

> And I had to like tell the nurses, teach the nurses and doctors about it and about the [insulin] pump (Amy).

> And I've gone to the hospital many times and doing it in an attempt to try not to be here (Amy).

> And they just take my sugars down and let me leave. [Be]cause they don't know what it [diabulimia] is, and I've had to describe to so many health professionals about what it is (Amy).

One participant also expressed relief upon finding providers that were knowledgeable in the realm of diabulimia.

> I found it helpful. It was nice when they really, really know like deeply about diabulimia (Becky).

Theme Summary

The theme "barriers to treatment" with subthemes "lack of facilities" and "lack of provider knowledge" offer insight into the difficulty that accompanies treatment of diabulimia. Both participants had attempted several previous attempts at treatment that failed. Individuals with diabulimia face difficulty in obtaining adequate treatment for their disease due to these barriers.

Chapter Summary

The lived experience of those with diabulimia was explained through five themes and two subthemes, which were collected through participant interviews. Each theme and subtheme was related and contributed to the overall experience of living with diabulimia.

CHAPTER VI

DISCUSSION AND INTERPRETATION

The purpose of this phenomenological inquiry was to explore, describe, interpret, and gain a deeper understanding of the lived experience of those with diabulimia. In this research five themes were identified with two subthemes from each individual's compelling description of their experience with diabulimia.

As each participant shared their unique story, common themes emerged linking each individual experience together. Although each individual story was unique, their experiences shared common frustrations, successes and desires. The themes which arose became essential to the understanding of the lived experience of those with diabulimia. The thick, rich description provided by the participants, offers insight into the lived experience of the diabulimic.

Findings as They Relate to the Current Literature

The current literature focuses on defining diabulimia as well as increasing awareness of the disease. Current literature also speaks to the commonly seen diabetic complications relating to diabulimia as well as the importance of a multidisciplinary approach to treatment of diabulimia. However, there is paucity in the literature that concentrates on the lived experience of those with diabulimia. With this in mind, the findings of this phenomenological research study are compared to what is available in the current literature.

Although the results of this phenomenological inquiry may support or expand on the current findings in the literature, the stories and experiences in this study are unique to these individuals with diabulimia.

Demographics

A total of two participants were recruited and participated in this study; both were Caucasian women. The ages of the participants ranged from 21 to 32 years. One was diagnosed with type 1 diabetes at age 11 and the other at age 16. Neither participant was married nor had any children.

Main Theme: Mixed Messages

The findings of this study reveal that participants felt they had received mixed messages in relation to diet and insulin management. Participants expressed frustration with education they had received regarding types of foods they could or could not eat. Similar findings are discussed by Brown and Akers (2014) who state that due to treatment of type 1 diabetes the individual no longer sees food on their plate, simply numbers. These same authors state that due to the great emphasis on food, weight, numbers and diabetes control the line between obsession with diabetes and taking great care of diabetes can easily blur. Davidson (2014) discusses the how demanding management of diabetes is for the individual as it requires a delicate mix of frequent blood sugar checks, dietary carbohydrate intake, daily exercise, and insulin injections. Larrañaga, Docet and García-Mayor (2011) state those diagnosed with type 1 diabetes are at an increased risk for eating disorders due to the selective nature of their food selection related to diabetes treatment.

Main Theme: Management of Diabetes

In this study participants discussed management of their diabetes. Both individuals discussed altering insulin administration. One participant had an insulin pump and discussed how it was possible to alter doses with the pump; while the other

simply stated that she was not taking all her prescribed insulin. These findings are consistent with current literature. Blanchard (2008) describes an individual with diabulimia who reported taking four to five units of insulin a day instead of the prescribed 23 units. Goebel-Fabbri et al., (2008) report that those who restrict insulin also report less frequency of behaviors related to diabetes self-care. Brown and Akers (2014) describe altering prescribed insulin regimen in order to avoid hypoglycemic episodes, a behavior that manifested into diabulimia. Darbar and Mokha (2008) discuss how some individuals with diabulimia administer only enough insulin to prevent development of diabetic ketoacidosis, while still controlling weight. Altering prescribed insulin regimen is a common theme that presents not only in this study but in current literature as well.

Main Theme: Negative Effects

The theme "negative effects" focuses the physical symptoms described by the participants while they were manipulating their insulin doses. Both participants described feeling physically ill, "awful," due to consistently elevated blood sugars. This is consistent with current literature in which Blanchard (2008) describes people with diabulimia as "keeping themselves sick." (p. 33). Hasken, et al. (2010) postulate those who have diabulimia are so focused on weight control that they do not turn their attention to the potential long term consequences of consistently elevate blood sugars.

One participant described lower extremity pain in relation to her diabulimia and associated relief of her leg pain with her current treatment for diabulimia. The long term microvascular and macrovascular complications of diabetes are well documented in current literature. Numerous articles discuss the more frequent occurrence and earlier

onset of said diabetic complications in the diabulimic population (Darbar & Mokha, 2008; Davidson, 2014; Hasken et al., 2010; Goebel-Fabbri et al., 2008; Larrañaga, Docet, & García-Mayor, 2011; Wilson, 2010). Wilson (2010) conducted a cohort study in which ten participants who had previously altered insulin administration to control weight reported early onset diabetic complications. In addition, all ten participants expressed regret over their lack of diabetes control and contributed their current diabetic complications to earlier diabetes related behaviors.

Main Theme: Diabulimia as an Escape/Addiction

The theme "diabulimia as an escape/addiction" brings the mental health aspect of diabulimia. Current literature describes how diabulimia is a way of rebelling against the type 1 diabetes. The individuals with diabulimia can be using the disease as a way to gain attention (Mathieu, 2008). Davidson (2014) describes how those diagnosed with type 1 diabetes are at risk for development of a subsequent eating disorder due to the psychological effects the diabetes puts on the individual. Brown and Akers (2014) describe how daily treatment of type 1 diabetes can become so overwhelming that the individual desires to stop thinking about it and uses diabulimia as a way to escape the constant demands that accompany treating type 1 diabetes. In a case study description offered by Ruth-Sahd et al. (2009), an individual with diabulimia discusses how the disease has such a strong hold that the individual is unable to stop manipulating insulin doses, despite knowledge of the potential health complications. The authors go on to cite that the individual recognized the deleterious effects diabulimia had not only on her own health but her friends and family as well, as yet the addiction was so strong she remained unable to cease her diabulimic behaviors.

Main Theme: Barriers to Treatment (Subthemes: Lack of Facilities and Lack of Provider Knowledge)

The findings of this study demonstrate those with diabulimia experience barriers to receiving treatment due to lack of treatment facilities and lack of provider knowledge. Participants expressed frustration in relation to these barriers. Both participants in this study had been in treatment multiple times and had continued to practice diabulimia following failed treatment. Participants relate failed treatment partially to a lack of facilities that specialize in diabulimia. These findings are consistent with information provided in current literature. Blanchard (2008) discusses a case study in which the patient entered a group therapy program for eating disorders. In the case study, the patient describes receiving treatment for her bulimia but could not receive help with her mismanaged insulin.

Lack of provider knowledge is a consistent discussion in current literature. The term diabulimia is classified in the *Diagnostic and Statistical Manual of Mental Disorders* (4^{th} ed.) under the classification of "misuse of medications for weight loss." However, the term "diabulimia" is not actually included in the text (Darbar & Mokha, 2008). The updated DSM V continues to lack the term "diabulimia" although mention of the disease is again made in the "misuse of medications to influence weight" under the heading "other specified feeding or eating disorder" (American Psychiatric Association, 2013). Diagnosis of diabulimia is further complicated by a lack of specific diagnostic criteria (Davidson, 2014). The Diabetes Eating Problem Survey-Revised demonstrates good internal consistency as a screening tool for diabulimia in young patients (Wisting et al., 2013); however, provider knowledge of this screening tool is lacking. Shih (2011)

postulates that providers have only become aware of the practice of diabulimia within the last three to four years; although, individuals with type 1 diabetes have altering insulin doses for the purpose of controlling weight for many years. Balfe et al. (2013), state that health care providers are lacking in their diagnosis of eating disorders in type 1 diabetics, especially during the early stages of the disease. Goebel –Fabbri et al. (2009) discuss how specific treatment by a knowledgeable provider is important because correcting insulin doses too rapidly can result in an increased risk of developing retinopathy or worsening existing neuropathies. Barriers to care are prevalent throughout current literature as well as in the findings of this study.

Implication for Health Care

The findings from this research study offer a perspective of the lived experience of two individuals with diabulimia. This phenomenological study contributes to the current literature by providing health care providers, including physicians, physician assistants, nurse practitioners, nurses, and other medical professionals a better understanding of the experience of those with diabulimia. While there is current literature speaking to the complications and treatment of diabulimia, there is a paucity of qualitative research examining the lived experience of diabulimia. This study provides a synopsis of the experiences of those with diabulimia.

Despite a concerted effort to recruit enough participants to achieve saturation, efforts were unsuccessful, thus the following cases are provided for context of this emerging problem. As Yan (2007) states there is an estimated 450,000 women partaking in diabulimia in the United States alone. Hasken et al. (2010) note that incidence of

diabulimia is increased in the adolescent and young adult population. Participants in this study are easily included into these classifications as both were young women.

The idea of "mixed messages" surrounding what types of foods to eat in relation to insulin administration and management of type 1 diabetes. Participants expressed frustration with the mixed messages they received. Nurses have a direct contribution to decreasing mixed messages by offering diabetic education in such manners that do not create confusion. A thorough assessment of diabetic education received and feelings associated with that education may be helpful to determine if patients experiencing mixed messages regarding their type 1 diabetes.

Another theme that was significant throughout this research related to "management of diabetes." Participants expressed altering insulin doses as well as infrequently checking blood sugars. One participant described how insulin pumps can be manipulated to allow for altered insulin doses. This theme was consistent with current literature in which descriptions of altered diabetes management are also prevalent. Providers need to be aware of this practice. Use of routine hemoglobin A1c levels may help providers to catch those who are altering their diabetes management, as A1c levels provide a three month average blood sugar reading.

The "negative effects" experienced by participants offer further cues for providers to assess and potentially diagnose diabulimia. A thorough understanding of patient's negative side effects may provide insight into diabulimic behaviors.

A further understanding of "diabulimia as an escape/addiction" is necessary for providers to understand. This theme offers insight into the mental health piece that is a huge component of diabulimia. A deeper understanding of the mental health aspect of

diabulimia can help providers make referrals to compile the multidisciplinary team necessary for treatment of diabulimia. Furthermore, by this study exploring the mental health piece of diabulimia providers can understand that a diagnosis of diabulimia is two-fold and providers must understand how to treat the eating disorder as well as the type 1 diabetes.

The barriers to treatment that are explored in this study offer insight into some of the difficulties faced by individuals who are seeking treatment for diabulimia. The subthemes that have been previously discussed speak to a lack of facilities that specialize in the treatment of diabulimia and the lack of knowledge on the part of providers. Both participants expressed frustration with the afore-mentioned barriers. It is important for providers to educate themselves on diabulimia in order to adequately treat this disease. Current literature suggests a multidisciplinary approach is necessary for adequate treatment of diabulimia (Goebel-Fabbri et al., 2009). Authors of this article go on to state a proper treatment team should include an endocrinologist, a registered nurse, a registered dietitian with eating disorder and/or diabetes training, a social worker, and possibility a psychiatrist. It is important for providers to have knowledge of resources within their communities in order to place proper referrals when compiling a multidisciplinary team. Lack of an acceptable screening tool and diagnostic criteria have also been noted to contribute to missed diagnosis of diabulimia (Davidson, 2014 & Wisting et al., 2013). Providers need to consider the possibility of diabulimia in individuals who continue to have poorly managed diabetes, as evidenced by elevated A1c, alterations in weight and possibly frequent episodes of diabetic ketoacidosis (DKA). One distinguishing factor of diabulimics is their focus on weight loss (Mathieu, 2008). In absence of a valid screening

tool providers need to implement their own method to detect diabulimia in patients. Goebel-Fabbri et al. (2008) suggest a screening question of "I take less insulin than I should." Providers must also assess if patients are not taking their appropriate amount of insulin due to diabulimia or due to other circumstances, for example, lack of finances.

Limitations

Findings of this study are limited to one geographical area of the United States and the participants were limited to one treatment facility. While the goal was to gather a diverse group of participants, the sample reflects Caucasian young women only. In addition, despite aggressive recruitment sample size was not sufficient to achieve data saturation.

Recommendations for Further Research

It is suggested by phenomenologist Max van Manen (1990) that a single phenomenological inquiry provides an individual interpretation of a phenomenon while revealing the possibility of further research to build a deeper and richer description of the experience. As such, it is the hope of this researcher that further inquiry into the experiences of those with diabulimia will occur as a result of this study. The themes yielded in this study are a result of this population alone and should be tested with other groups for further comparison and validation.

Given the limited qualitative research of the lived experience of the diabulimic, more research is needed with other variables taken into account. Replication of this study with a larger sample size, including various age and socioeconomic backgrounds, may offer further understanding. In addition, research completed with individuals who had received successful treatment of diabulimia would offer further insight into this

phenomenon. Research examining the experience of the multidisciplinary team treating those with diabulimia may offer an alternative perspective into this phenomenon.

Chapter Summary

This chapter provided a discussion and interpretation of the themes found in this phenomenological inquiry. Much of the research findings contribute to and expand on the current literature. Overall this research provides new information and insight into the experiences of those with diabulimia. Implications nursing and health care providers as well as recommendations for further research was also discussed.

Conclusion

Two individuals with type 1 diabetes and a co-occurring eating disorder voluntarily participated in this phenomenological inquiry. The findings from this research yielded five themes and two subthemes which provide a thick, rich description of the lived experience of the diabulimic. Findings were validated through participant review and provide the overall interpretation of the experience of those with diabulimia. Understanding the meaning and significance of the experiences of those with diabulimia holds benefit for not only health care providers and future researchers, but individuals with diabulimia as well. This research contributes to the current body of literature by examining the experiences of those with diabulimia. Lastly, this research offers a single interpretation of this phenomena, it provides opportunity for further research and investigation into the important and growing problem of diabulimia.

APPENDIX A – IRB APPROVAL

University of Nevada, Reno

Research Integrity Office
218 Ross Hall / 331,
Reno, Nevada 89557
775.327.2368 / 775.327.2369 fax
www.unr.edu/research-integrity

DATE:	September 4, 2014
TO:	Stephanie DeBoor, PhD, RN, CCRN
FROM:	University of Nevada, Reno Social Behavior and Education IRB
PROJECT TITLE:	[628456-1] An exploration of eating disorders (diabulimia) associated with type 1 diabetics.
REFERENCE #:	
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	September 4, 2014
EXPIRATION DATE:	September 4, 2015
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review category # 7

The above-referenced protocol was reviewed and approved by one of UNR's Institutional Review Boards in accordance with the requirements of the Code of Federal Regulations on the Protection of Human Subjects (45 CFR 46 and 21 CFR 50 and 56). This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission. This submission has received Expedited Review based on applicable federal regulations.

Please prepare your renewal form at least 4-6 weeks prior to your expiration date using IRBNet. https://www.irbnet.org

Our office will send you courtesy reminder to submit your renewal form. Unless renewed, the IRB only has authority under the federal regulations to allow a study to be open 12 months or less. There is no grace period. The study will be closed on the above stated expiration date unless the IRB receives/approves a new renewal form.

Instructions on preparing a modification or submitting your renewal is located on our web site at http://www.unr.edu/research-integrity/human-research-protection/performing-research Call our office if you have any questions or problems with use of IRBNet software.

Approved Documents

- Application Form - Exempt test, surveys, interviews, or observation of public behavior (UPDATED: 08/27/2014)
- Confidentiality/Non-Disclosure - transcriber confidentiality agreement (UPDATED: 08/28/2014)
- Consent Form - informed consent (UPDATED: 08/27/2014)
- Letter - recruitment letter (UPDATED: 08/27/2014)
- Other - attestation form (UPDATED: 09/3/2014)
- Other - letter of agreement from center (UPDATED: 08/27/2014)
- Other - recruitment flyer (UPDATED: 08/27/2014)

- Questionnaire/Survey - interview questions (UPDATED: 08/27/2014)
- Training/Certification - Roney CITI (UPDATED: 08/27/2014)
- Training/Certification - DeBoor_Citi_IRB.pdf (UPDATED: 06/27/2014)
- University of Nevada, Reno - Core Data Form - University of Nevada, Reno - Core Data Form (UPDATED: 08/27/2014)

Problems Researchers Must Report to the Research Integrity Office or IRB Staff (to be reported as soon as possible, but within 10 business days)

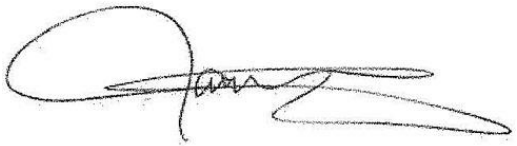
- New or additional risks: Outcomes that the principal investigator believes are unexpected, related to the research, and suggest the research may place participants or others at greater risk of harm than was previously known or recognized
- Changes to expected harms or benefits: Any report indicating the frequency or magnitude of harms or benefits may be different than initially presented to the IRB
- Privacy: Any invasion of privacy related to an individual's participation in research
- Confidentiality: Any breach of confidentiality involving research data
- FDA Changes: Any change in FDA labeling or approval for a drug, device or biologic used in a research protocol
- Immediate harm: Any change to the protocol to eliminate an apparent immediate hazard to a research participant, prior to seeking IRB review and approval
- Prisoner: Any incarceration of a participant in a protocol not approved to enroll prisoners
- Sponsor: Any event that requires prompt reporting to the sponsor
- Sponsor: Any sponsor-imposed suspension for risk
- Protocol change: Any accidental or unintentional change to the IRB approved protocol that harmed participants or others, indicates participants or others may be at increased risk of harm, or has the potential to recur
- Device: Any unanticipated adverse device effect
- Department of Health: Any non-compliance identified by Department of Health audit or monitoring
- Federal agency: Any investigation or report by federal agency related to the research
- Medical license or practice changes: Any loss of license or hospital privileges by any researcher on the study
- Complaints: Any complaints that suggest participants or others may have been harmed or placed at increased risk of harm

PI Responsibilities

- Maintain an accurate and complete protocol file.
- Submit continuing projects for review and approval prior to the expiration date.
- Submit proposed changes for review and approval prior to initiation, except when necessary to eliminate apparent immediate hazards to subjects. Such exceptions must be reported to the IRB at once.
- Report any unanticipated problems which may increase risks to human subjects or unanticipated adverse events to the IRB within 5 days.
- Submit a closure request 10 days after project completion to the IRB.

If you have any questions, please contact Nancy Moody at 775.327.2368.

Sincerely,



Janet Usinger, PhD
Chair, Social Behavioral Education IRB
University of Nevada Reno

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Nevada, Reno Social Behavior and Education IRB's records.

APPENDIX B – FACILITY APPROVAL

Center for Hope of the Sierras
CRC ED Treatment, Inc
(775) 828-4949
(775) 332-3021 fax
3740 Lakeside Drive Ste 201
Reno, NV 89509

Monday, July 14, 2014

University of Nevada Reno

Subject: Letter of Acknowledgement of a Research Project

To Whom it may concern,

This letter acknowledges that I have reviewed a request by Alicia Roney to conduct a research project entitled: An exploration of eating disorders (Diabulimia) associated with type 1 diabetes. I agree to allow the research team, specifically Alicia Roney, access to parents and/ or patients at the following sites for this project:

Center for Hope of the Sierras

If we have any concerns or need additional information, the project researchers will be contacted or we will contact the University of Nevada, Reno Office of Human Protection directly.

Sincerely

Name: Elizabeth Shanklin, RN, BSN

Position: Nursing Supervisor

Phone: 208-720-6474

Email: eshanklin@crchealth.com

E. Shanklin RN

Elizabeth Shanklin, RN, BSN Nurse Supervisor
Center for Hope of the Sierras

7/22/14
Date

APPENDIX C – RECRUITMENT FLYER

Diabetes and Eating Disorders Research Opportunity

Individuals with Co-occurring Diabetes and Eating Disorders (Diabulimia) Wanted For Research Study

- My name is Alicia Roney. I am a Registered Nurse pursuing a Master's Degree at the University of Nevada, Reno.
- I am researching the experiences of type 1 diabetics with co-occurring eating disorders.
- The title of my study is *An Exploration of Eating Disorders (Diabulimia) Associated with Type 1 Diabetes.*
- Would you like to share your story with me?
- Inclusion criteria: any individual with type 1 diabetes who are currently being treated for an eating disorder
- Participants will agree to a face-to-face audio-taped interview to be conducted at a private location of your choice.
- A follow-up interview will be conducted so you can clarify your experience and add any additional remarks.
- All information will be kept strictly confidential and you will be given an alias for the research study results.

I hope you consider being part of this research. If you would like to participate or have additional questions, please contact me at:

_____

_____

APPENDIX D – RECRUITMENT LETTER

Recruitment Letter

Thank you for your interest in my study!

My name is Alicia Roney. I am a Registered Nurse and am pursuing my Master's Degree at the University of Nevada, Reno. I am currently conducting research in the area of eating disorders associated with Type 1 Diabetes, specifically diabulimia. The study is entitled *An Exploration of Eating Disorders (Diabulimia) Associated with Type 1 Diabetes.* Individuals interested in participating must meet the following criteria: 1) be diagnosed with Type 1 Diabetes, 2) with a co-occurring eating disorder (diabulimia). Participants will agree to a face-to-face, audio-taped interview to be conducted at a mutually agreed upon location to ensure anonymity of the participant. Additionally, participants will be asked to agree to a second meeting to discuss the transcribed verbatim material, clarify any misinterpretations, and to allow time to add any additional thoughts to their experiences.

Participation is completely voluntary, confidential, and there is no cost incurred as a result of participating. The interviews will last approximately 60 minutes and will be held in a private mutually agreed upon location. In the first interview we will be discussing your experiences regarding co-occurring diabetes and eating disorders. The second interview will be mainly for clarification purposes and for you to add any other comments.

Due to the emotional nature of the subject matter, you may refuse to answer any question. There will be information for medical referral should you be interested. You

may withdraw from the study at any point without penalty. The benefits of participating in this research study, is to provider health care professionals with a deeper understanding of diabulimia and therefore allow for better diagnosis and treatment. These experiences will contribute to the nursing profession's knowledge as well as patients seeking medical advice from primary care practitioners. The goal of this qualitative research is to expand the knowledge and understanding of diabulimia. The findings of this study will be presented in a master's thesis and made available to you upon request. Findings will additionally be used for potential article publication or presentation.

All information obtained in this research will remain strictly confidential. Participants will be given a pseudonym and all research materials will be kept in a locked cabinet in the researcher's office. Audiotapes will be destroyed in compliance with specifications of the granting IRB.

I hope you will consider being a participant in this study and look forward to working with you. If you are interested in participation or have any questions please contact me at aachurra@hotmail.com or 775-848-6230. Thank you for your consideration.

Sincerely,

Alicia Roney, RN, CCRN

APPENDIX E – CONSENT FORM

UNIVERSITY OF NEVADA, RENO SOCIAL BEHAVIORAL INSTITUTIONAL REVIEW BOARD CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE OF STUDY: An Exploration of Eating Disorders (Diabulimia) Associated with Type 1 Diabetes.

INVESTIGATOR(S): Stephanie DeBoor, PhD, RN, CCRN 775-682-7156; Alicia Roney, RN, CCRN 775-848-6230

PROTOCOL #:

SPONSOR: N/A

PURPOSE

You are being asked to participate in a research study. The purpose of this study is to achieve a better understanding of diabulimia. Understanding your experiences might help providers to better diagnose and treat diabulimia.

PARTICIPANTS

You are being asked to participate because you are; 1) a type 1 diabetic and 2) have a co-occuring eating disorder.

PROCEDURES

If you volunteer to participate in this research study, you will be asked to take part in a face-to-face, audio-taped interview, with the student researcher, lasting approximately one hour. The interview will be held at a mutually agreed upon, convenient location. This location will be private to ensure confidentiality of the participant and the information collected. During the interview you will be asked questions related to your diabetes, insulin intake and attitudes about your weight. Following the initial interview, you will be asked to read the transcript from the interview and the student researcher's interpretation to make sure it is a good description of your experience. Follow-up communication will be conducted either by telephone, post office mail or face-to-face. Review and discussion of the transcript is expected to take no more than one additional hour of your time. It is important for you to remember that your participation in this study is voluntary and all information shared will be kept confidential.

DISCOMFORTS, INCONVENIENCES, AND/OR RISKS

There are risks involved in all research studies. This study may include only minimal risks. There may be some discomfort answering some of the questions related to your diabetes, insulin intake and attitudes about your weight. You may take a break, refuse to

answer any question that makes you feel uncomfortable, or end the interview. You may withdraw from the study at any time. There are no risks for refusing to participate.

BENEFITS

You may not experience any direct benefits from participating in this study other than the satisfaction of having participated in research. However, we hope that by gaining a better understanding of diabulimia primary care providers will be better able to diagnose and provide treatment for diabulimia.

CONFIDENTIALITY

All information gathered during this research study will be kept completely confidential. All participants will be given an alias (pseudonym) to keep all material confidential. In field notes, recordings, and transcription, participants will be referred to by their pseudonym to protect anonymity and confidentiality of shared information. Interviews will be audio taped and transcribed by a private, professional transcriptionist who has signed a confidentiality statement. Your identity will be protected to the extent allowed by law. You will not be personally identified in any reports or publications that may result from this study.

The Department of Health and Human Service (HHS), other federal agencies as necessary, the University of Nevada, Reno Social Behavioral Institutional Review Board may inspect your study records. The study records will be securely stored in a locked file cabinet in the researcher's office and destroyed in accordance with the granting IRB specifications. .

COSTS/COMPENSATION

There will be no cost to you nor will you be compensated for participating in this research study.

DISCLOSURE OF FINANCIAL INTERESTS

The researcher has no financial interest in this study.

RIGHT TO REFUSE OR WITHDRAW

You may refuse to participate or withdraw from the study at any time and still receive the care you would normally receive if you were not in the study. If the study design or use of the data is to be changed, you will be so informed and your consent re-obtained. You will be told of any significant new findings developed during the course of this study, which may relate to your willingness to continue participation.

QUESTIONS

If you have questions about this study or wish to report a research-related injury, please contact Alicia Roney, RN, CCRN at 775-848-6230 or Dr. Stephanie DeBoor, PhD, RN, APRN, CCRN at 775-742-7732 at any time.

You may ask about your rights as a research subject or you may report (anonymously if you so choose) any comments, concern, or complaints to the University of Nevada, Reno Social Behavioral Institutional Review Board, telephone number (775) 327-2368, or by addressing a letter to the Chair of the Board, c/o UNR Office of Human Research Protection, 205 Ross Hall / 331, University of Nevada, Reno, Reno, Nevada, 89557.

CLOSING STATEMENT

I have read ( ) this consent form or have had it read to me ( ). [Check one.]

_____has explained the study to me and all of my questions have been answered. I have been told of the risks or discomforts and possible benefits of the study.

If I do not take part in this study, my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw from this study at any time without penalty [or loss of other benefits to which I am entitled].

I have been told my rights as a research subject, and I voluntarily consent to participate in this study. I have been told what the study is about and how and why it is being done. All my questions have been answered.

I will receive a signed and dated copy of this consent form.

Signature of Participant (*or Legally Authorized Representative**) Date

Signature of Person Obtaining Consent Date

Signature of Investigator Date

APPENDIX F – TRANSCRIPTION AGREEMENT

Transcriber's Confidentiality Agreement

Title of Study: An Exploration of Eating Disorders (Diabulimia) Associated with Type 1 Diabetes.

Principal Investigator: Stephanie DeBoor, PhD, RN, APRN, CCRN

Student Investigator: Alicia Roney, RN, CCRN

Contact Phone Number: 775-742-7732 or 775-848-6230

As a transcribing typist of this research study, I understand that I will be hearing tapes of confidential interviews. The information on these tapes has been revealed by research participants who participated in this project on good faith that their interviews would remain strictly confidential. I understand that I have a responsibility to honor this confidentiality agreement:

I hereby agree not to share any information on these tapes with anyone except the principal investigator and student researcher of this project. Any violation of this agreement would constitute serious breach of ethical standards and I pledge not to do so.

This acknowledgment is governed by HIPAA as well as other applicable Federal, state, university, and local laws, and regulations.

[redacted] 8/28/14

Signature of Transcribing Typist **Date**

[redacted]

Printed Name of Transcribing Typist

APPENDIX G – INTERVIEW GUIDE

INTERVIEW QUESTIONS

Demographic Questions:

1) What is your age?

2) What is your marital status? (Single, Married, Divorced, Separated, Significant Other, Partner).

3) Do you have children?

4) What is your ethnic background?

Structured Interview Questions:

1) Are you a type 1 diabetic?

2) At what age were you diagnosed as a type 1 diabetic?

3) What were your thoughts when you were first diagnosed as a type 1 diabetic?

4) What has been the biggest change, challenge, or difference you've experienced since being diagnosed with Type 1 diabetes?

5) Can you tell me more about how you manage your insulin? (Is there anything regarding your insulin management that brought you here to Center for Hope?)

6) Do you keep track of your blood sugars? Do you have consistency in your blood sugars?

7) Did you receive formal teaching about dietary and insulin management following your diagnosis of diabetes? Can you tell me more about that?

8) Have you noticed changes in your body since being diagnosed with diabetes?

Potential Cue Questions:

1) Can you tell me more about that?

2) How does that make you feel?

Is there anything that we talked this interview that you like me to discuss with your counselor?

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