**Title: Critique of Qualitative and Quantitative Research Articles on Diabetes in America**

**Summary**

This paper provides a critique of two articles: A qualitative study and a quantitative study. The critique is done in form of a template that generally entails analyzing the research methods that each of the study uses to achieve its objective. The quantitative article involved determining if age at migration influences diabetes among Hispanic immigrants in United States. In the qualitative study, the researchers set out to explore self-management practices among diabetic patients and better control of glycemic control. The critique of these two articles has revealed that the two research approaches differ greatly in terms of the techniques they use. In general, the areas examined include research problem and purpose, literature review, theoretical/conceptual framework, methods of data collection and analysis, research design, study population, ethical consideration, discussion of findings, limitations, implications and recommendations and importance of the study in my practice.

The second part of this paper provides a comparison of the information gained from analyzing the two different research methods in the articles. It also provided the pros and cons of the two research approaches and provided examples from the articles. Moreover, it provided a response to the statement that qualitative research is not scientific. Finally, it highlighted the general insights that researchers can gain from qualitative and quantitative studies.  Qualitative studies are explorative in nature and use non-numerical data to gain a better understanding of the phenomena. Quantitative studies are descriptive in nature and uses quantifiable data to formulate information and discover pattern in research. The quantitative research tends to be more scientific than the qualitative research. Quantitative research is structured, uses statistical data and a larger sample size. Qualitative research is unstructured and uses a smaller sample size.

**Research Problem and Purpose**

The Hispanic population records the highest incidences of diabetes. The number of Hispanic immigrants in America is growing at a high rate.  It is thus projected that the individual risk as well as the health burden of diabetes among this population group will have a greater effect on the health status of individuals and the general health care system. This study sought to establish whether age at migration influences diabetes among this population group. The aim of this study was to raise awareness of this disease and guide the development of health policy that can be effective in preventing diabetes.

**Hypotheses and Research Questions**

This study had three research questions and 6 hypotheses. Each research question had two hypotheses: an alternate and a null hypothesis. The research questions were causal in nature. The first two research questions compared two phenomena to determine if a relationship exists. The first research question set to establish if there is an association between age at migration and diabetes among Hispanic population. The second research question set to determine if obesity can explain the diabetes-migration relationship. The third research question compared more than two phenomena to determine a relationship among them. It set to determine the relationship between diabetes and age at migration and whether obesity influences that relationship.  A null hypothesis is the opposite of the alternate hypothesis and the researcher set to nullify, disprove or reject it.

**Literature Review**

The author used reliable and current literature review. She examined peer-reviewed articles that are relevant to the research problem. The author obtained these articles for Medline, Google Scholar and PubMed. She also examined information from appropriate websites such World Health Organization, CDC and the Office of Minority Health and Health Disparities. The author provided an integrated review of the current information on the research problem. She examined cohort studies, cross sectional studies, controlled trials and case-control studies. She critiqued the literature and identified gaps that she used to justify her research. The author found that there were few studies dealing with age at migration and diabetes.

**Theoretical or Conceptual Framework**

This study used a socioecological model to examine the impact of diabetes on Hispanic population. It involved establishing the interrelationships between people, communities and environments. Moreover, it set to determine the impact of these relationships on health outcomes. This includes individual behavior, attributes, maturation, lifestyle choices and emotional wellbeing. It puts forward that personal behavior is supported and shaped by several groups and systems.

**Population**

This study sampled Hispanic population that had migrated in America during 2005-2011 and aged between 18-80 years. The multistage sampling method was used to sample the population. This method involves two stages. Stage 1 entails obtaining a sample of 400 and primary sampling units from a population of 1900 using probability design. Stage 2 involves dividing each Primary sampling unit into two segments. Segment 1 consists of numerous addresses in the primary sampling unit while Segment 2 includes type of housing. This method sampled four Hispanic subgroups including the South American, Puerto Rican, Mexican, and other Hispanic like Cuban, Dominican and others. Thus, this method of sampling ensures that a representative sample is obtained. The population sample consisted of 19, 727 participants.

**Protection of Human Research Participants**

The NHIS adheres to the federal law when collecting personal information. This law requires personal information to be kept confidential and require the consent of the participants.

**Research Design**

This study employed a quantitative cross-sectional study design examining 7 years of information collected from the NHIS. The data collected from the NHIS was nationally representative and included demographics, income, education, weight and height, health-related subjects, and duration stayed in United States among other relevant information.

**Instruments and Strategies for Measurement**

The author used the NHIS which is a cross-sectional survey. The survey included questions on diabetes, country of origin, age and duration stayed in the United States. This data is collected every year and contains enough Hispanic immigrant participants to allow a study of this population. Surveys allow for high level of representativeness.

**Data Collection**

This study used the NHIS to collect data. This included information on diabetes that the NHIS had recorded for several years. The data collected from NHIS is considered reliable and valid as several studies that have pooled data using this method have noted its consistency over the years. Survey provides current data and makes it easy to obtain participants and data.

**Data Analysis**

The author used SPSS (21) to provide a statistical analysis of the data. She provided a univariate description of every variable, including calculations of central tendency as well as variation. This analysis helps in understanding the nature of the sample under study. The author also used bivariate analysis to determine the relationship between variables. To test the hypothesis, the author used multivariate analysis and the bivariate logistic regression model.

**Interpretation of Results**

The author has provided enough data to interpret the outcomes of her data analysis. The outcomes of the first research question found a positive correlation between diabetes and age at migration. This means that there was a high likelihood of those Hispanic immigrants that migrated to United States at an early age to be diagnosed with diabetes and vise versa. The results of the second research question showed that obesity had a significant impact on diabetes, although other control variables might have a greater influence. The results of the third research question demonstrated that diabetes was more likely to be detected in Puerto Ricans than other groups.

**Discussion of Findings**

The discussion of findings was linked to the theoretical framework. Diabetes and age at migration can be related to the degree of influence as explained by the Socioecological model. The individual behaviors, attitudes, beliefs, lifestyle, friends, family, community, culture, religion, income, diet, education, political status, and social status among others need to be taken into account. The author expected to get these findings and she demonstrated that these findings are consistent with past studies.

**Limitations**

This study had several limitations. The author obtained all the information from the NHIS. She thus relied on secondary data which is gathered in the past and thus its time validity cannot be ensured. Moreover, this study collected data founded on self-reported information that is prone to recall bias.

**Implications**

The conclusions that the author draw are warranted by the research findings. The study findings prove the study hypotheses as all the null hypotheses were rejected. The conclusions highlight the importance of these study findings to the health and education sector in terms of development of effective education and intervention programs.

**Recommendations**

The author of this study provides legitimate recommendations for future research. The author asserts that successful intervention strategies and health policy for diabetes among the Hispanic immigrants can be developed if further research is carried out to determine whether migration timing influences diabetes. The author has sufficiently described his study to allow for its replication.

**Research Utilization in Your Practice**

The findings from this study can guide the development of public health policy and educational initiatives. Health professionals can use the results obtained from this research to improve current best strategies for diabetic prevention and treatment among the Hispanic population. This study provides a basis for additional research and creating awareness for people and communities may instigate social change among Hispanic population. Further research can be conducted to establish whether diabetes is influenced by migration timing. This can lead to development of effective intervention, prevention and education programs which can decrease the risk of diabetes diagnosis.

**Research Issue and Purpose**

Diabetes is the major cause of kidney failure, blindness and amputations in United States. Healthier long-term results and less complication can be achieved through good control of glycemic. However, just around half of diabetic patients are able to control their glycemic to manageable level. Most of these patients are suffering from type 2 diabetes mellitus that is manageable with food, physical activity and medications. Therefore, self-care is critical to diabetes management.  This study compares everyday self-management practices of patients who have good and poor control of diabetes so as to establish effective strategies for achieving glycemic control.

**Researcher Pre-understandings**

The article includes a discussion of what is previously known about diabetic self-care. The authors argue that self-care practices that include self-monitoring of glucose level in the blood, exercise, diet and medication among others have been effective in medical trials. However, they assert that about half of diabetic patients have not achieved tighter glycemic control.

**Literature Review**

The researchers have used evidence-based literature review. They have used current and relevant literature review and explained how the previous studies relate to their study. In addition, they have highlighted areas of disagreement and agreement between these studies and their study. Moreover, they have provided a critical evaluation of the quality and findings of other studies. However, they have not provided an integrated summary of the literature review as some of the literature review is found in the introduction where the other is found at the conclusion and have not been explicitly identified.

**Theoretical or Conceptual Framework**

This study is based on the conceptual framework that effective lifestyle practices can result in successful management of diabetes.

**Participants**

The participants in this study were adult patients who have suffered from type 2 diabetes for more than one year. The setting is a university-affiliated Family Medicine Clinic in Galveston, Texas. The study group was 2010 population and the sample size was 48, 440. The study sample was ethnically diverse including the whites, Black-Americans and Hispanics.  The participants were sampled from the clinical waiting areas. The setting is suitable for the research problem and the sample size was adequate to give reliable results.

**Protection of Human Research Participants**

The study sought the consent of the all the participants. The University Institution Review Board approved their consent form. This study has not included any identity information or pictures.

**Research Design**

This study utilizes a comparative design to establish strategies associated with glycemic control. Different glycemic control groups were established. The study adopted a matched design to reduce the impact of confounding variables whereby a poor control patient was matched with a good control patient. Diabetes period and prescription modality were distributed equally among the glycemic control subgroups.

**Data Collection/Generation Methods**

The study used interviews that included open-ended questions to collect information. The researchers conducted in-depth interviews to establish whether diabetic patients had good, fair or poor control through inquiring about their self-management practices. The study used qualitative, open-ended questions in order to collect detailed responses. Triangulation was used as the study embraced open-ended questions and free-listing interviews to collect reliable information.

**Credibility**

The collected data were credible as the study used triangulation. It conducted in-depth interviews using open-ended question and free-listing interview to collect valid and reliable information. The study also used a patient-centered approach to research.

**Data Analysis**

The researcher conducted a qualitative comparative analysis to establish main themes linked to good glycemic control. This method entails using a formal Boolean rationale to establish distinctive factors between subgroups through contrasting the existence or nonexistence of codes across participants. This method takes into account all likely combinations of codes, consistencies between and among groups to establish valid relationships associating thematic codes with group membership.

**Findings**

The study found out that patients with good control of glycemic tested their blood glucose a minimum of two times a day and had a low intake of sodium and high intake of vegetables and fruits, limited their portion sizes and were physically active. Those with fair control their lifestlyes included drinking non-caloric drinks, decreasing carbs, and limiting sweets and checked their glucose level once a day. Patients with poor control of glycemic were more probable to fail to test their blood glucose and fail to take their medication.

**Discussion of Findings**

The discussion of findings was linked to the framework. The researchers expected to get those findings. The findings of this study were consistent with previous studies, though the researchers found new findings. The new findings indicated that better control may be achieved with diet and SMBG without physical activity.

**Limitations**

The researchers acknowledged that the interviews were conducted at one single point in time and this made it impossible for the study to identify whether poor control patients had moved to fair control after education or whether they have remained in the same position.

**Implications**

The conclusions that the researcher draws are in line with the study findings. The authors have concluded that glucose monitoring is a critical part of daily self-management of diabetes.

**Recommendations**

The researchers have recommended further research on efficiency of dietary practices that stress sodium monitoring as well as permit some level of cheating. Moreover, this study suggested that offering pill boxes as recall aids and diabetes education can help enhance poor control. The description of this study is sufficiently comprehensible and complete to enable its replication. The researchers have confirmed their findings using additional researches.

**Research Utilization in Your Practice**

This study is applicable to my practice as its findings are appropriate in ensuring effective self-care of diabetes. I will use the findings to help diabetic patients achieve better control of their glycemic through encouraging them to test their blood glucose level and observe their diet. Moreover, I will endeavor to educate the patients on successful strategies for self-management. The utilization of this study may trigger changes in other areas of practice as when patients achieve good control of their glycemic it will imply better long-term results and less complication related to diabetes such as amputations, blindness and kidney failure. This means that the number of deaths related to diabetes will reduces and most importantly the costs associated with diabetes will decrease. This will definitely be a benefit to the healthcare providers, the patient, the family and friends and the society as a whole. It will have a positive impact on the clinical field and the economy as a whole.

**Qualitative and Quantitative Research**

From the critical analysis of the qualitative and quantitative research articles, it is eminent that the two research approaches greatly differ. Qualitative research tends to be exploratory in nature whereby it explores an existing phenomenon to gain an in-depth understanding. It uses non-numerical method to discover individual behavior (Creswell, 2013).  For example, the qualitative article examined set to understand self-care and its relation to better glycemic control. Quantitative research quantifies the problem through generating numerical data which can be changed into useable statistics. It uses quantifiable data to formulate information and discover pattern in research. This permits generalization of outcome from a sample to the whole population under study. This quantitative research tends to be conclusive in nature.

Qualitative article analyzed used unstructured and semi-structure in-depth interviews to collect data. The method involved use of open-ended questions and free-listing of questions. These methods of data collection are flexible and hence elicit detailed and comprehensive information. On the other hand, quantitative research study used survey to collect information. This method is rigid and thus elicits limited expression from the participants (Barnham, 2015).

Qualitative study uses a smaller sample size that is not essentially representative of the entire population. Participants are often selected on the basis that they meet certain criteria. For example in this case, the study’s participants consisted of patients who had suffered from type 2 diabetes for more than one year and were selected from a clinic setting. On the other hand, the quantitative study used a larger sample case that was representative of the population under study. It used multistage probability sampling to select respondents.

**General advantages and disadvantages of qualitative and quantitative research**

The general advantage of qualitative research is that it uses flexible method of data collection that elicits rich and detailed responses and this lead to a better understanding of the phenomena under study.  For example this study used in-depth interview that consisted of open-ended question and free-listing of questions. The general advantage of quantitative research is that it uses a larger sample size and thus generates information that is reliable and can be generalized to the entire population (Creswell, 2013).

The disadvantage of the qualitative research is that it uses smaller sample and thus may not generate reliable information. Using a smaller sample size implies that it takes a longer period to collect data and thus this method can be time-consuming. The disadvantage of quantitative research it uses rigid techniques that are highly structured to collect information. These methods tend to limit respondents’ responses and thus may not collect detailed information (Trochim and Donnelly, 2008).

**Qualitative research is not real science**

Although qualitative research is appreciated for its relevance, it tends to be lacking in terms of scientific accuracy. It relies on case open-ended questions, observations and case studies to collect in-depth data. It ignores statistical inferences to understanding research problem and thus it tends to be low in reliability. Moreover, qualitative research do not allow for falsifiability, which is a scientific criteria. Qualitative research does not state data in a way that it can be disapproved. Qualitative research do not include hypothesis as it doesn’t seek to prove anything.  Proving data wrong is critical in avoiding confirmation bias (Miles, Huberman, & Saldaña, 2013). Qualitative research methods entail exploring and explaining a research problem to gain a better understanding. For example, the qualitative research article analyzed did not have a hypothesis. Hypotheses need to be stated precisely so as to enable investigators to replicate the study. This entails providing operational definitions, which the qualitative research does not provide. Qualitative research tends to explore a broader study area.  Thus, to ensure high scientific quality of qualitative study, it is critical to improve understanding of qualitative techniques and their scientific guiding principle (Polit & Beck, 2010).

**General insights that both quantitative and qualitative studies can provide to researchers**

Qualitative studies provide rich, detailed insights of an individual’s behavior, attitudes and feelings and thus provide researchers with a thorough understanding of the research problem.  Qualitative studies try to understand the environment and use a holistic approach. The outcomes are insights and include words, pictures or quotes. The research results are an analysis of the researcher. Thus, qualitative studies tend to generate insights which are often subjective as they are subject to the interpretation of the researcher. The results are not statistically obtained and cannot be replicable. However, qualitative studies provide useful insights for a human oriented design process (Miles, Huberman, & Saldaña, 2013).

Quantitative studies try to count, classify and measure. The research results are measurements in the form of numbers. The researcher in this case is out to prove a specific question. Thus, quantitative studies are objective in nature and allow for generalization to the entire population. Quantitative studies allows for replication as they are based on quantifiable data. Quantitative studies can be used to predict future results as well as investigate causal relationships. They thus provide researchers with reliable sources of knowledge (Barnham, 2015).

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