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EXPERIENCES OF PARTICIPANTS RECEIVING NUTRITION COUNSELING IN
THE SIOUXLAND WIC OFFICE

by

Alexandria Logan

A Thesis Submitted in Partial Fulfillment
of the Requirements for the
University Honors Program

Department of Health Sciences
The University of South Dakota
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ABSTRACT

Experiences of participants receiving nutrition counseling in the Siouxland WIC office

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A key component of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is nutrition education. The purpose of the following interview-based study was to understand how women experience nutrition education in the WIC program, specifically in the Siouxland office. The nutrition education can either be completed through online modules or in-person appointment sessions with a dietitian. Through interviews with 10 participants at the WIC clinic in Sioux City, IA, the study demonstrates that most women prefer online nutrition education, but many explained that the in-person education was more useful or effective. The online nutrition education was largely less time intensive than the in-person sessions. Every participant had access to the online nutrition education, found it easy to navigate, and appreciated the ability to skip an appointment upon completing a module.

KEYWORDS: nutrition education, online education, in-person education, WIC

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CHAPTER ONE

Introduction

The Special Supplemental Nutrition Program for Women, Infants, and Children (hereafter WIC) was established to provide nutrition education and financial benefit in order for families to prepare healthy meals for their children. Nutrition education through WIC impacts most of the participants through in-person, individual sessions with dietitians, group class settings, or online nutrition education. With the use of technology, programs are now able to offer options that are accessible to participants in new ways. While the increase of options can be beneficial to participants, new barriers arise such as accessing devices to use the internet. Studies have shown that WIC nutrition education is beneficial and effective in promoting healthy eating behaviors (Au et al., 2017; Gerstein et al., 2010; Nestor, McKenzie, Hasan, AbuSabha, & Acherberg, 2001; Ritchie, Whaley, Spector, Gomez, & Crawford, 2010), but more research is needed to assess how it is experienced across these different platforms.

This study will focus on the experiences of nutrition education of ten participants interviewed in the Siouxland WIC clinic. In the following literature review, the background on the WIC program, efficacy of nutrition education, barriers to nutrition education, online education, the comparison of in-person and online education, wichealth.org research, and Iowa WIC will be reviewed.

WIC

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a federal program that provides funding for food, referrals for basic health care, and nutrition education. These three services are offered to two groups of people: low-income women who are pregnant or breastfeeding, and caregivers of infants and children up to age five (“Women, Infants, and Children”, 2017a). WIC currently serves 53% of infants and about 7.7 million people each month in the United States (“Frequently Asked Questions about WIC”, 2017). The program is available in all fifty states, thirty-four Indian Tribal Organizations, as well as the District of Columbia, Guam, Commonwealth of the Northern Mariana Islands, Puerto Rico, American Samoa, and the Virgin Islands (“The Special Supplemental Nutrition Program for Women, Infants and Children (WIC Program)”, 2018). Ninety agencies administer WIC through places like hospitals, schools, community health agencies, schools, and Indian Health Service facilities (“The Special Supplemental Nutrition Program for Women, Infants and Children (WIC Program)”, 2018).

WIC began in 1972 as a pilot program in response to the poverty of mothers and children to improve their health (“WIC Program Overview and History”, n.d.). WIC was established as a permanent program in 1975 and has grown ever since. In 1978, lack of access to nutritional food options and education became a concern. In response, the WIC program introduced nutrition education, limited food available to purchase for healthy choices, and integrated referrals for a variety of services such as immunizations and alcohol and drug abuse prevention, as well as family planning (“WIC Program Overview and History”, n.d.). From 1992 to 2004, breastfeeding campaigns took place to

encourage women to breastfeed, connect women with breastfeeding counselors, and improve the public view of breastfeeding (“WIC Program Overview and History”, n.d.). The services and programs provided by the WIC program have been relatively constant since 2009.

In order to receive WIC benefits, participants must meet four eligibility requirements: categorical, residential, income, and nutrition risk (“WIC Eligibility Requirements”, 2017). The categorical requirement dictates the circumstantial requirements demanded of participants wishing to enter the program; women must be pregnant, postpartum up to six months after the infant is born, or breastfeeding up to a year, and children can be served from birth up to the age of five (“WIC Eligibility Requirements”, 2017). The residential requirement dictates that applicants must live in the state where they apply, and Indian Tribal Organization administered clinics applicants must meet the residency guidelines set by that organization (“WIC Eligibility Requirements”, 2017). The income requirement dictates that applicants must have an income at or below the standard set by the state, which has to be between 100 percent of the federal poverty guidelines but no more than 185 percent (“WIC Eligibility Requirements”, 2017). Automatic income eligibility is received if applicants participate in Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), if certain family members are eligible for Medicaid or TANF, or the applicant participates in another program administered by the state (“WIC Eligibility Requirements”, 2017). The nutritional risk requirement dictates that applicants, either women or the children, must be deemed to have nutrition risk by a health professional, which can be done by a physician, nurse, nutritionist, or at the WIC clinic (“WIC

Eligibility Requirements”, 2017). They must either have a medical-based condition, such as anemia, or a dietary-based condition, such as a poor diet lacking in healthy food (“WIC Eligibility Requirements”, 2017). Participants that are accepted into the program receive either checks or a WIC Electronic Benefits Transfer (EBT) card to use their food benefits at approved grocery stores for approved items (“Women, Infants and Children (WIC)”, 2017b). The WIC program also provides nutrition education to all of its participants.

Of the Food and Nutrition Services programs, WIC is one of the only programs that must provide nutrition education for the participants. WIC participants receive nutrition education at least four times each year (“WIC Program Nutrition Education Guidance”, 2006). The only other comparable program would be the Supplemental Nutrition Assistance Program (SNAP), which has created an educational program option for participants to encourage the consumption of healthy foods, use of community health to impact SNAP users, and the prevention of obesity for participants, called SNAP-Ed (“Supplemental Nutrition Assistance Program Education (SNAP-Ed)”, 2017). These programs differ as the eligible population is different and a large focus for WIC is breastfeeding and nutrition education, specifically for the child in the program. The nutrition education through WIC is designed to train caregivers how to purchase, prepare, and serve healthy meals to their children and families (“WIC Program Nutrition Education Guidance”, 2006).

The WIC program strives to develop high quality nutrition education that focuses on the needs of their participants (Ritchie, 2010). This is a personal process where healthcare professionals work with patients to give advice on how to feed children who

are picky, have food allergies, do not want to eat vegetables, or have another barrier to eating healthy meals in their home (“WIC Program Nutrition Education Guidance”, 2006). Nutrition education can be completed either through an in-person visit at the WIC clinic with a nurse or dietician or through online modules on a website, such as wichealth.org, depending on their eligibility for the online option (“Nutrition and Health Education”, 2014). The option to complete online modules in lieu of clinic visits is limited by two factors: the online service is only available in certain states, and high-risk participants, like pregnant or breastfeeding mothers and infant children, are required a more detailed follow-up face-to-face. The typical family who uses online nutrition education has a child aged one to five years who does not have high risk conditions (J. Sterner, personal communication, 2017). Most online nutrition education programs are currently only available in a limited number of languages and not all programs provide multiple options (“Online Nutrition Ed”, 2018).

In-person education includes a session with a dietician that provides WIC recipients with space to ask questions. This session can take anywhere from 5 to 25 minutes depending on the needs of the client (J. Sterner, personal communication, 2017). Sessions can include how to make food, how to shop for healthy food, what food is considered healthy, what is appropriate for the child’s age, how much of each kind of food to eat, and more (J. Sterner, personal communication, 2017). Dieticians can use handouts, speak with the client, or utilize other resources and options (J. Sterner, personal communication, 2017). Nutrition education is designed so that women can use their WIC benefit funds to buy healthy foods and then understand how to make those foods into healthy meals using recipes and tips from the sessions.

Only approved healthy foods are allowed to be purchased using WIC benefit funds. WIC provides participants with a list of approved, healthy foods, based on recommendations from the Institute of Medicine, which also includes recommendations for each age of the children served through WIC (“WIC Program Overview and History”, n.d.). Fruits, vegetables, cheese, eggs, whole grains, protein options, and other healthy foods are on the list of approved foods (“WIC Program Overview and History”, n.d.). Culturally sensitive foods are also available using WIC benefits (“WIC Program Overview and History”, n.d.). Researchers agree that because the WIC program impacts so many low-income families throughout the country, nutrition education must be assessed to assure the best outcome for participants (Ritchie, Whaley, Spector, Gomez, & Crawford, 2010). Understanding the efficacy of nutrition education is important before improvements can be implemented for how the education is delivered to and received by participants.

Efficacy of Nutrition Education

The nutrition education requirement through WIC is effective in promoting healthy eating behaviors among participants. In a study focused on evaluating online and in-person nutrition education, researchers measured the efficacy of nutrition education by studying participants’ use of salt (Au et al., 2017). The study had 500 WIC participants from the Los Angeles area who completed either online or in-person education, and researchers found improvements in nutrition knowledge and healthy behaviors by participants limiting the use of salt in cooking and eating fewer foods with salt added (Au et al., 2017). Both online and in-person nutrition education were effective in promoting these behaviors (Au et al., 2017). A vital step in improving healthy behaviors is to make

sure participants know and understand how to use healthy foods they can purchase with their WIC benefits. A study in California had mothers that were mostly Latina participate in focus groups. After participating in one nutrition education class, participants viewed fruits and vegetables as more valuable and important foods (Gerstein et al., 2010). In a study of WIC participants in California, researchers found that both English and Spanish speaking participants were able to better recognize educational material, utilize more healthy foods, and explore healthy milk options after receiving nutrition education (Ritchie et al., 2010). Nutrition education has also led to an increase in the frequency of participants and their families eating breakfast, where the previous lack of time, food, or preparation ability hindered that ability (Au, Whaley, Rosen, Meza, & Ritchie, 2016). In a study of WIC participants in California, women considered breastfeeding as an option when they had not previously (Nestor, McKenzie, Hasan, AbuSabha, & Acherberg, 2001). Nutrition education appropriately encourages and provides options for WIC participants to seek out and engage in behaviors beneficial to the health of themselves and their families.

In addition to the nutritional benefits of breastfeeding, mothers that decide to breastfeed their children are more likely to continue with the WIC program after the children turn 14 months old (Whaley, Whaley, Au, Gurzo, Ritchie, 2017). When participants continue with the WIC program, the program remains an avenue for continued nutrition education and personal funding for healthy foods for their children. In addition, participants are able to maintain the support of WIC staff as the child grows and their nutritional needs change. In one study, participants reported that WIC staff are largely considered a positive resource for themselves and their children in the program

(Nestor et al., 2001). All of the participants in the study agreed that it would be a bad decision to remove the nutrition education requirement of the program, explaining that the education is what makes the food package impactful as it encouraged healthy and proper eating habits (Nestor et al., 2001). One of the participants noted that all of her children were benefitting even though they were too old for the program because she was able to show them how to eat healthy through the nutrition education she received for her younger child (Nestor et al., 2001). The benefits of the WIC program can extend to immediate family members as healthy meals and recipe ideas can be shared with others, even if the WIC benefit money cannot. There are, however, barriers to nutrition education that must be addressed.

Barriers to Nutrition Education

Understanding the barriers to nutrition education is important in promoting effective change in the program to best meet the needs of WIC clients. There are several barriers to receiving nutrition education that WIC participants can experience. Researchers found that in focus groups with WIC staff and participants, three themes emerged about nutrition education barriers (Greenblatt et al., 2016). First, children without supervision hinder the nutrition education process by being disruptive or interruptive (Greenblatt et al., 2016). Second, it is a barrier if the materials about nutrition education are neither an efficient use of time nor are particularly applicable to participants (Greenblatt et al., 2016). Third, there is a demand for engaging nutrition education methods that encourages client participation (Greenblatt et al., 2016). There are barriers specific to in-person sessions as well. In-person education necessitates that the participants come into the clinic for scheduled appointments to receive their nutrition

education. One study found that both the appointment waiting room time and having to bring children to the appointments were barriers to successfully using the program and receiving the services offered (Woelfel et al., 2004). With the online nutrition options, however, some of the barriers to in-person nutrition education can be eliminated.

Online Nutrition Education

Online nutrition education is used across various nutrition platforms, such as SNAP-Ed, the nutrition education component of the SNAP program, whose focus is on low-income individuals and families. In a study focused on web-based versus in-person nutrition education for individuals that use SNAP-Ed in Indiana, researchers found that web-based nutrition education significantly improved healthy behaviors as compared to in-person education after three sessions (Neuenschwander, Abbott, & Mobley, 2013). Web-based programs vary from in-person programs in structure, but researchers have been determining the effectiveness of online compared to in-person. In another study, positive nutrition and physical activity behaviors were initiated and maintained through a web-based program (Winett et al., 2010). This population, however, consisted of high-income individuals rather than the low-income individuals that use WIC nutrition education (Winett et al., 2010). While these results are promising, they may not translate to being successful in the WIC participant population. Online nutrition education does come with a set of potential barriers to participants.

Internet access is key to utilizing the online option of nutrition education. In another study of SNAP-Ed participants in Indiana, almost half of respondents of a questionnaire given to WIC participants have access to a computer in their home and over three-fourths of the respondents had connection to the internet (Neuenschwander, Abbott,

& Mobley, 2012). The researchers found that online nutrition education is a feasible option for low-income individuals receiving nutrition assistance (Neuenschwander et al., 2012). In Illinois, SNAP-Ed users, which include some WIC users, have also expressed their desire to use online nutrition education (Loehmer, Smith, McCaffrey, & Davis, 2018). The majority of the responses of the questionnaire participants indicated they had Internet access through a cell phone, home computer, or library computer (Loehmer et al., 2018). Other internet access options that were chosen were school and friend or family home, and only 24% of participants did not have internet access (Loehmer et al., 2018). Through an online survey of the western region WIC states, commonwealths, and territories reaching over 8,000 respondents, researchers found that the majority of WIC clients can use either a computer or a mobile phone to access the Internet (Bensley et al., 2014). Of the respondents, 92% own a smart phone, and the majority of respondents are interested in options using technology to receive WIC services, such as text messaging for breastfeeding support and nutrition education through text messaging and email (Bensley et al., 2014). Receiving nutrition education through alternate ways interested 87% of respondents for email nutrition education, 82% through texting, and 25% through Twitter (Bensley et al., 2014). The researchers suggest that technology should continue to advance and be used to serve the WIC clients including reminders for appointments, nutrition education, scheduling, and breastfeeding support (Bensley et al., 2014). A study on over 300,000 WIC clients who have completed online lessons found that mobile access was how almost half of lessons were completed (Brusk & Bensley, 2016). The same study found that individuals who use their mobile device do not spend as much time engaging with the material as non-mobile users (Brusk & Bensley, 2016). Overcoming

many common barriers to receiving nutrition education could be accomplished through the online nutrition education option.

Comparing In-person and Online Nutrition Education

The availability of both online and in-person nutrition education options for WIC participants has led to efforts to determine which option is better. In a study comparing the effectiveness of traditional nutrition education with online nutrition education for WIC participants in Michigan, researchers found that internet nutrition education is a positive, viable option for participants (Bensley, Anderson, Brusk, Mercer, & Rivas, 2011). Internet nutrition education users reported they preferred the online nutrition education option and found it easy and helpful to use (Bensley et al., 2011). Intent to pursue healthy nutrition behaviors in the future was also reported (Bensley et al., 2011). The internet nutrition education group also had better healthy eating outcomes in terms of vegetables and fruits compared to their in-person nutrition education counterparts (Bensley et al., 2011). In a separate study on participants in Los Angeles, California, researchers assigned participants to in-person or online nutrition education and measured their satisfaction after they completed the education modality through a questionnaire (Au, Whaley, Gurzo, Meza, Ritchie, 2016). Participants were satisfied with both online and in-person education; however, the online nutrition education group had a greater preference for online option than the in-person group did for the online option (Au, Whaley, Gurzo, Meza, Ritchie, 2016). Participants that had completed in-person nutrition education were more likely to share what they had learned with others, but both groups were satisfied, and 85% of the in-person and 81% of the online participants were likely to share the information from the class with others (Au, Whaley, Gurzo, Meza,

Ritchie, 2016). Online nutrition education could be a solution to barriers faced by low-income individuals such as transportation, living in a rural area, or discomfort in group settings (Case, Cluskey, & Hino, 2011). Researchers found that in a survey of Alaska Native individuals, 85% of individuals agreed that it would be useful to be able to access web-based nutrition education, and that many individuals had access to a computer or phone (Power, Braun, & Bersamin, 2017). Online nutrition education is comparable to in-person education and desired by populations that face barriers to in-person education.

Online Nutrition Websites

There are six websites for online nutrition through WIC. WIC Online Education is used by an agency in California, Health Bites is used in Virginia and West Virginia, Texas WIC is used in Texas and West Virginia, and WIC-Ed is used in two states and two Indian Nations, and WICSmart.com is used by seven states and four other clinics (“California – PHFE WIC Program, n.d.”; “Health Bites | Health and Nutrition for Families | Virginia WIC”, n.d.; “Welcome to Texas WIC, 2017; “Online Nutrition Education - WIC-Ed.com”, n.d.; “WIC Smart - About JPMA”, 2014). Due to the lack of research on these options, the widespread use of wichealth.org, and the concentration of this study, there will not be a focus on the other online nutrition options. The other online nutrition education website, wichealth.org, offers services to WIC clients in 28 states. The website offers recipes and videos, provides an opportunity to connect with social media, and utilizes a tailored system approach based on the client need (“What We Do”, 2018). Each online lesson is mobile friendly and focuses on human connection by using virtual educators that assist the user (“Online Nutrition Ed”, 2018). States that use wichealth.org have the option to customize the education, such as the links, lessons,

survey questions, and more, to fit with their clients' needs ("Online Nutrition Ed", 2018). After the client is finished, they can either print off or directly upload their certificate to the state system; they are then prompted to revisit their previous lessons when they log on to the website again to establish continuity between sessions ("Online Nutrition Ed", 2018). There are 45 different lessons to choose from, and clients have the option to save materials that they would like to use again ("Online Nutrition Ed", 2018). Participants with older children have the option to skip an in-person appointment if they complete an online nutrition education module. WIC participants who are breastfeeding do not have access to the online option and must come into the clinic for each appointment due to infant health monitoring and breastfeeding assistance. The online modules are only offered in English and Spanish, so the option is not available to all participants.

Limited research has been conducted to assess the efficacy of wichealth.org. One study shows that, after using wichealth.org, several client nutrition issues improve (Bensley et al., 2006). Specifically, the 'picky eater' module helped parents improve nutrition with their child. Participants using the website reported that it was helpful, not complicated, and they would be open to continued use (Bensley et al., 2006).

Wichealth.org as a method of nutrition education is considered a popular way to decrease nutrition education issues (Bensley et al., 2006). Another study resulted in the majority of the survey respondents reporting that they accessed the internet on a computer, while the remaining participants used their cell phone or both (Bensley et al., 2014). Less than a quarter of the participants had used online nutrition education, but many agreed that video chat options with nutritionists and internet support groups would interest them (Bensley et al., 2014). Participants also expressed interest in online appointment

scheduling, recipe access, a way to scan authorized foods on a cell phone, and the ability to access to their EBT benefits online (Bensley et al., 2014).

Iowa WIC

Iowa has 20 WIC agencies across the state (“Iowa WIC Fact Sheet”, 2017). Participation in 2015 included 63,481 total participants, with 16,300 infants; 32,077 children; 5,811 postpartum women; 3,687 total breastfeeding women; and 5,607 pregnant women (“Iowa WIC Fact Sheet”, 2017). The monthly food value per participant is \$36.86, and the state receives \$58,309,778 in total funds. The Iowa participant breastfeeding rates are 66% compared to the national rate of 70% (“Iowa WIC Fact Sheet”, 2017). The state has seen a steady increase in online nutrition education modules completed, and the new EBT cards are used in every clinic (“Iowa WIC Fact Sheet”, 2017).

The current study addresses the need to better understand WIC participants’ preferences and experiences between online and in-person nutrition education, accessibility of the online option, and how they experience the two options in terms of learning and usefulness. This study will analyze the aspects of online and nutrition education that are appealing, frustrating, obstructive, or accessible for positive experiences with nutrition education. This study will explore if the participants have access to the online nutrition education option, if they ever have problems receiving their nutrition education or benefits, how they learned about the WIC program, and how many children they have. The participants were asked to elaborate on which option was more useful or convenient, their preference for the additional options it gives them such as skipping an appointment and choosing a topic, and how long their respective sessions

typically last. The effectiveness of the program is dependent on if the participants are receiving and applying the nutrition education information well; this study aims to determine how the women are receiving the information, as we have seen through prior research that the application of the nutrition education is positive for healthy behavioral change.

RQ 1: Do participants prefer online or in-person nutrition education?

RQ 2: What factors influence that preference?

CHAPTER TWO

Methods

This study took place at the Siouxland District Health WIC clinic in Sioux City, IA. I was interested in the connections between the Supplemental Nutrition Assistance Program and obesity, and I thought the nutrition education component of the WIC program would be interesting to study. After reaching out to the clinic, I worked with the Director to establish a relationship and determine if the study would be possible, if the clinic would be a good setting, and if the study would be mutually beneficial. After we determined that the study would be a good fit, I then connected with one of the dietitians in the clinic to learn how the nutrition education process works, what the setup for interviews would be, how I would have access to the population, and share any interview questions she thought would be beneficial to the study. While my original intention was to examine nutrition education materials, the most beneficial study for the program and the project was to analyze the online nutrition education program, which had been implemented recently. After consulting the literature, I determined that I wanted to explore more specifically how participants experienced online and in-person nutrition education options.

Study Procedure

Interviews were used to access clients' personal thoughts, opinions, and ideas about nutrition education. A list of 11 primary interview questions with additional prompting questions was created, and the study received Institutional Review Board

(IRB) approval. This study was funded by a Council for Undergraduate Research and Creative Scholarship (CURCS) mini-grant through the University of South Dakota, which allowed for travel compensation and interview payment for participants. The grant allowed for 10 interview participants to each receive ten dollars upon completion of the interview. Eligible participants included those who were currently using the WIC program who also had used online nutrition education at least once. This included the WIC clients themselves or caregivers that received WIC benefits on behalf of a child enrolled in the program.

Each day of the interviews, the secretary and the dieticians would look into clients' files to see if they had completed online nutrition education before. They did not provide me with access to the client information. After WIC staff identified potential candidates, they would present the research study opportunity to the client. Every dietitian had a flyer (Appendix A) explaining the study, which included the purpose and goal, how long the interview would take, and how much the participant would be compensated for their time. They did not pressure the participant into agreeing to the interview. If the client chose to participate, they were led to a private room with their child or children that had a table and two chairs. I introduced myself and the purpose of the study. The informed consent form (Appendix B) was explained and initialed by the client. Then the interview questions began, and each interview was recorded. A series of interview questions (Appendix C) were asked, and the participants answered as they felt comfortable. For example, they were all asked how they learned about the WIC program, if they preferred in-person or online nutrition education, how long each session was, if they ever struggled to get the foods or recipes they need to make healthy meals, if they

could think of any improvements to online nutrition education, and more. Following the interview, a thank you card with a ten-dollar bill was given to each interview participant, and they initialed on a form to affirm that they received the correct amount for completing the interview. Each interview lasted between four and eight minutes, depending on how much the participant wanted to share, if the child was upset during the interview, or if the family was in a hurry to leave the office. Every interview was transcribed at a later date.

Participants

All of the participants in the study were women. Of the ten women interviewed, 70% identified as White, 10% as Black/African American, 10% as Hispanic, 10% as American Indian or Alaska Native. For age, 40% identified as 25-34, 30% of the women did not report, 10% are 18-24, 10% are 35-44, and 10% are 55-64. Of the various education levels, 40% of women reported attending some college, 30% did not report, 10% completed some high school, 10% have a high school degree, and 10% have an associate degree. WIC utilization spanned from 1 to 10 years ($M = 6.5$; $SD = 3.3$) and the number of children was between 1 and 4 ($M = 2.4$; $SD = .9$). When I asked how the women heard about WIC, 5 heard from their family members, 3 heard from physicians, and 2 heard from the food assistance office. Each woman has completed at least one in-person and one online nutrition education session, which was required to qualify to participate in the study.

Data Collection and Analysis

Each interview was transcribed by myself, and the demographic data was collected. I conducted a thematic analysis following the steps listed by Braun and Clarke

(2006). First, I familiarized myself with the data through transcription and additional reading before developing themes. I took great care to represent the participants' thoughts by listening and following along with the transcription to make sure the punctuation and utterances were accurate. After that, I made a list of what stuck out to me from the data and started producing initial codes from the data. The coding was completed manually. I kept the codes in a spreadsheet, organized by interview number and question. The demographic data was put into a spreadsheet for statistical analysis and record keeping. For each question, I coded the response from the interview. For example, when the women were asked if they had any problems receiving their benefits or nutrition education, negative replies such as 'no' or 'nope' or 'never' were all noted as no. For the more complex questions, I would pick out the main points from their long answer, or directly quote the participant in the chart depending on the answer. I did not limit codes to specific themes; instead, I coded each answer. After compiling the coded interview responses, I looked for themes. I created a list of main themes and sub-themes. The list came from analyzing the codes and looking for many answers that were similar or different. I also looked between questions as a few were follow-up to determine if answers were more similar or different than I initially had perceived. Once themes were identified, I returned back to the original interview to make sure the context of the answer and statements were an accurate match to the identified theme. After, I reviewed the themes to refine them and determine which would be main themes, which would be sub-themes, and which did not have enough support. The themes had to fit and make sense with the rest of the data set. I then identified important quotes which the participants

shared that I thought encompassed either the unique thoughts of one participant or the collective thoughts of many participants.

CHAPTER THREE

Results

Each participant was asked if they had regular access to a computer; they were then asked where they were able to complete their online nutrition education modules. Every participant had access to a computer at home either through a laptop, desktop, tablet, or smartphone device. When asked if the participant ever has issues receiving their benefits or their nutrition education, none of the participants reported any issues. In order to begin gathering their opinions of how the online nutrition education system worked, each participant was asked if they liked having the option to complete an online nutrition education module in lieu of attending an in-person appointment. Every participant appreciated this option. Participants were asked if they liked having the ability to choose their topic through the online education module. Out of the ten participants, nine liked that option and one did not like having that option. One participant who enjoyed this option shared, referring to her daughter, “because other topics don’t always concern her so it’s nice to have more of a variety of topics that you can pick from that would go better with her lifestyle or her choice or what’s better for her” (4: 52-54)¹. This mother understood that her daughter has unique desires and tastes, so she would like materials that are relevant to her daughter’s preferences and needs. When participants were asked which option was more useful, four participants said in-person, three chose both, two chose online, and one was unsure.

¹ (participant interview number: lines of interview transcript)

Suggestions for Improvement

Only four participants had ideas for improving the online nutrition education program. A general consensus between the few was their desire for more options in the online nutrition education program so as to make sure the modules are relevant to their children and lifestyles as well as interesting for them to learn about and explore. One participant shared that because she is going to be with WIC long-term, it would be good to offer more options, so she does not have to repeat topics.

I guess maybe if they would just add a little more options. I mean they have quite a bit of info and the like choices you can choose from but if they would put a little more, 'cause let's say I have a couple more years to go and I have to do it every so often, I'm going to keep repeating the same thing over and over. So, and it would be nice to get fresh new stuff, so you'll have more to go off of. (8: 68-73)

Introduction of new material into the online lessons was important for this participant.

Another improvement suggestion was to add more available recipes for participants to take home and try with their children. One mom, who was impressed by the calendar given out that day, shared her thoughts on increasing the number of recipes available.

I think it would be neat to have more kid friendly recipes like handed out when we come in. Like I saw I was reading on the calendar they gave me today each month has a recipe on the bottom and I saw a couple that I will probably make, you know, in the future but not having that would I look it up? No. The ideas just like here here's a neat thing mix cheerios with peanut butter and hey blah blah have this. So maybe like some more helpful ideas I would like to I would benefit from. (7: 75-80).

The calendar she was speaking about was a free calendar given to all interested participants that entered the office. Each month includes a different healthy recipe to try with children and families at home. She pointed out several pictures to me during this

comment. The ability to try new recipes at home was a critical part of her WIC nutrition education experience and helped her find new ways to present healthy food to her children with less burden of coming up with recipes herself.

Many women expressed how much they enjoy the WIC program. One participant identified the resources she can use with her children specifically.

I mean they offer very good information and options for you know making different meals for kids who are finicky eaters and you know how it is to try to get kids to eat vegetables and stuff, sometimes it's not very easy. So yeah, they offer, you know, good links and resources to finding recipes that are more intriguing to the kids than you know some of the stuff that I could just make up on my own. (3: 80-84)

The participant recognized how the WIC program can provide support in the areas where she needs assistance in getting her kids to eat their vegetables or other healthy foods.

Another participant spoke extensively about how the WIC program has impacted her life positively. Two of her main points were that WIC makes a difference in the lives of young children and teaches parents what are considered healthy food options. In turn, this gives her the ability to share what she has learned with family and friends, advocate for WIC honestly, and understand the resources WIC provides her (personal communication, 2017). She shared directly in the following quote.

I have to learn from somebody too. Not only by my mom but also by having programs that help to guide my daughter in the right direction and because of WIC and because of the help they provided me she was able to breastfeed well over a year to almost two years old. Because there was somebody always there. They gave me a phone number of the consultation that I could call if I had a problem if she wasn't feeding right. They gave me her cell phone number, so I could call her at any point in time. Nobody else would do that. (4: 90-95)

This mother was thoroughly impressed with the program and advocates for others to try to get involved as well. She was very clear on the positive impact it had for both the short- and long-term health of her daughter.

Online Training

I asked each participant if they had received training for the online nutrition education program to gauge if they understood how to navigate the website and whether the training needed to be improved. Half of the participants said they did not receive training for the program and the other half said that they received either verbal training, a pamphlet, or both. One participant who had not received training on how to use the online program explained that “it was all provided online I guess and then like kind of not really step-by-step, but it was really simple” (5:25-26). She was able to figure out the system and complete her modules without any training. This was the consensus of the other women who had also not received training. Of the women who did receive training, they reported that the program was easy to use and that the training was adequate for them to be able to navigate the website. Even though responses varied, each woman confirmed that she could utilize the system without much difficulty.

Reasons for Online Preference

When asked if they preferred in-person or online nutrition education, 7 participants indicated online, 2 liked both, and 1 preferred in-person nutrition education. For the women who preferred online nutrition education, a few of their reasons included not having to travel, avoiding waiting room wait times, convenience, and the ability to save recipes and other resources on their computers. The weather in Sioux City is a common concern among participants who travel to the WIC clinic with their children, which is why a participant said,

[a]ctually when I first heard about the online part was during a winter snow storm last year so nobody could get out and they gave me the choice to do that and I think that’s genius because why would you want to come risk I mean I only live a

couple blocks away but I mean you can't drive on these roads sometimes. (1: 46-49)

Enabling participants to determine the safety of road conditions while completing their nutrition education was important to this participant. Another concern was getting children ready and prepared to travel to the clinic, and a participant who has three young children shares, "Yeah, it was nice to not have to you know drag the kids out and come all the way down here and do it at your own pace and you know your own schedule at home, what works best for you" (3: 32-33). The convenience of online nutrition education was beneficial to her lifestyle.

Reasons for Situational Preference

The participants who liked both in-person and online nutrition education shared that the online option was convenient, but that the in-person option provided personal connections and better advice. One participant identified an example of when the in-person education was more personalized to her needs and was more beneficial than an online session would have been.

I like the in-person. So the lady just was giving me ideas on how to transition him he wants to drink milk all day and she gave me this cup with a spout kinda telling me you know hey maybe at Christmastime he can get a fancy new cup get rid of the sippy cup 'cause he associates the sippy cup with the milk and he doesn't want water in his sippy cup. He doesn't want anything but milk and he wants milk all day. So, she said smaller portion size and she gave me that cup that would be easier with the holes for him to drink out of, so online I probably wouldn't have got that personal advice. (7: 36-42)

Without the in-person session, this participant might not have explored the option of a different cup to change her son's behavior. Being able to interact with someone in person was important to her in that moment, but she also recognized the benefits to online education. She explained that her family's lifestyle varied in how busy they were based

on their children's activities, and it was easier to complete online education in the summer and come in for visits in the winter. These two participants who enjoyed both online and in-person options also said the most beneficial option was dependent upon the amount of questions they had because in-person education provides a better avenue for answers. One participant explained that either option is beneficial if the situation is prime for the type of nutrition education being received:

I mean I guess when you're doing one-on-one you might get a little more out of it 'cause you can ask more questions and get them answered. I mean you're still learning quite a bit of information off line [through online education] and I guess if you still have questions there's still people here to answer for you, so I mean either way it's a win-win situation. (8: 38-41)

Having both options was viewed as beneficial and important by that participant for the different needs she has in her life. The responses to which option the participants preferred were largely based on what worked best in their lives and met their needs in the best way.

Reasons for In-person Preference

The participant who preferred in-person education was able to access the internet and found the online nutrition easy to complete and navigate. Neither having internet access nor being able to understand the online option was a factor. Her opinion was that there is more opportunity for hands-on learning opportunities, such as learning how to cook and receiving suggestions on recipes, in the office setting. Specifically, she shared that she preferred in-person training "probably 'cause they show you like what to make and and they just like tell you instructions like how to cook and stuff" (6:39-40). Having the option to continue in-person education was important for this participant. She saw

the in-person option as more beneficial, even though she also said that she enjoyed having the option to skip an appointment if she completed an online module.

Nutrition Education Logistics

When asked to estimate how long the in-person and online nutrition education sessions took, answers varied. The in-person education took longer than the online education for eight of the participants. The other two participants estimated that the in-person nutrition education and the online nutrition education took about the same amount of time.

When each participant was asked if they had someone to contact for nutrition education help if they needed it, every participant said that they did. One woman at first said no, but then after further thought, she shared that she had the option to go to a doctor but had not needed to do that yet (personal communication, 2017). Another participant explained “yeah, they had it on the online stuff, it says if you have any questions to give the local office a call” (10: 63-64). This participant was the only one who recalled the note on the website. The other women did not share who their contact was, but they all confirmed there was someone they could contact.

CHAPTER FOUR

Discussion and Conclusion

This study explored the experiences of participants in the Siouxland WIC clinic in regard to their in-person and online nutrition education modules. The results from this study can be used in future studies and in practical application for the Siouxland WIC office. Most women prefer online nutrition education due to the convenience of skipping an appointment, choosing their own topic, avoiding time in the waiting room, the ability to save recipes online, and not having to travel. However, many acknowledged the benefits of in-person education as well, such as personal communication and interaction and a better ability to ask questions and get answers. There were limited barriers to accessing online nutrition education for the women interviewed for the study. For example, every participant had access to a computer at home, and no one currently has problems receiving their benefits or nutrition education. The difference in completion time for in-person and online nutrition education was that the online nutrition education did not take as long for 8 participants and took the same time as the in-person education for 2 participants. The participants shared ways that the online nutrition education option through wichealth.org could be improved, such as adding additional topics. The women largely appreciate WIC and the benefits and education they receive through the program.

Similar to previous studies, the women identified that WIC was a good program, and they learned a lot about nutrition education (Au et al., 2017; Gerstein et al., 2010; Nestor, McKenzie, Hasan, AbuSabha, & Acherberg, 2001; Ritchie, Whaley, Spector,

Gomez, & Crawford, 2010). These interview participants all view WIC as a necessary part of their lives and appreciate the nutrition education that is offered. This study specifically analyzed the women's preferences and experiences with online and in-person education. In line with other results, the women largely preferred the online nutrition education option. The barriers to nutrition education, including distracting children, inapplicable materials, and lack of products, showed up in a few of the answers. The reasoning for online nutrition preference included not having to get the kids ready and fight with them, avoiding waiting room times, and choosing applicable topics for the children's lives. This reasoning shows that the online adaptation of nutrition education can circumvent and eliminate those barriers while allowing for more effective and efficient nutrition education for parents. There is also a regional importance of these opinions. The prior studies have mainly been conducted in California and Michigan, which tend to have different climates than Sioux City, IA. While participants in other areas of the country may have better access to transportation, the participants in Sioux City have more limited options and also face the winter weather and the challenges associated with getting children ready to leave the house. This study did identify that women have varying reasons for this preference and understand the benefits of in-person education differently than online education.

The benefit of this study is providing knowledge about what participants appreciate about both online and in-person education. Neither one should be eliminated; rather, both should be improved to best meet the needs of the WIC participants. Knowing that women appreciate the ability to save recipes online suggests increasing the number of recipes online as well as providing an in-person equivalent, so participants can

view both forms of nutrition education as satisfactory and beneficial. Asking questions is important to women for the in-person option, so providing an improved method for the asking and answering of questions online could be beneficial. The input of participants is required to improve aspects of nutrition education that are currently either ineffective, or nonexistent but desired. The research shows that nutrition education works. It is now time to revise the program to ensure greater impact and continually improve nutrition outcomes for these families.

A particularly interesting discovery in the results of this study was that most women acknowledged that the in-person education was either more or as useful to them when compared to the online nutrition education option. This could have to do with most of the women spending more time in in-person sessions than in their online modules, being able to ask direct questions to dietitians, the ease of understanding in-person explanation, or other factors.

Implications for Research and Practice

Future research should explore the differences between online nutrition education and in-person education in WIC clinics in many realms, including which is more effective, which is more accessible to clients, how to utilize the benefits of each to improve the other, and how to continually improve the overall system for both. Further exploration of why individuals prefer the online nutrition education despite learning more through in-person sessions could be useful to understanding how to improve online nutrition education for participants. Also, future leaders should consider adding more options and sessions online. Another topic would be to look at how to make online nutrition education more accessible, such as providing an option for those who do not

speak English or Spanish. Continuing to work towards culturally relevant information will improve client outcomes (Ikeda, Pham, Nguyen, & Mitchell, 2002).

Researching what barriers women face that prevent the online nutrition education from being as effective would also be important.

The WIC clinic in Sioux City, IA can use this material to improve and maintain positive aspects of nutrition education. The clinic could work with participants to make sure they are taking enough time when completing the online modules. They can make sure that the women are finding the online modules to be useful and tailor the online and in-person ratio to meet client needs. The dieticians should be aware of the clients' understanding that the in-person sessions are more helpful, and thus take advantage of the in-person appointments they have with each client. One participant shared the desire for more recipes handed out at the clinic, which is an option that dieticians could consider. Wichealth.org should consider more online session options. While making sure the participants understand how to use the online nutrition education modules is important, there is not a need for increased explanation as every participant said it was easy to use.

The limitations of this study first include the population interviewed. There were only ten women, and the majority were white. All of the interviews took place in the fall and winter; thus, this study did not account for the women who have their in-person appointments in the spring and summer, which could provide different results. Although all of the women in this study have access to the internet at home, this study did not collect data on how many women served at the Siouxland office have access to internet or how many cannot use the online module option because of that barrier. Each interview involved a child that was tired or scared of being in the room with me. The women came

and spoke with me after their appointment, which led to both the participant and their child being ready to leave. Due to the rushed nature of the interviews, I was unable to ask many follow up questions that could provide clarity to some of the answers the participants provided. If I were to redo the interviews, I would want them to occur in a less hectic environment with provided entertainment for children. Asking more about the reasoning for online or in-person preferences could be informative.

This study provides applicable suggestions for future improvements in the Siouxland WIC clinic. WIC nutrition education is an important component of the program, and many participants find it beneficial. Both in-person and online nutrition education options should continue to be offered, with improvements made to each option to optimize the outcomes for every participant.

APPENDICES

APPENDIX A

Informational Flyer

**Have you participated
in online nutrition
education?**

GET \$10

All it takes is one 15 minute
interview about your nutrition
education experience.

**A USD student is doing research!
The research question is: How are
women experiencing nutrition
counseling at the WIC office in
Sioux City, IA?**

Contact a WIC staff member for more information.

APPENDIX B

Informed Consent

Approved: 8/14/17
Expiration: 8/13/18
USD IRB

INFORMED CONSENT
The University of South Dakota

TITLE: *An analysis of online and in-person nutrition education experiences of women in the WIC clinic in Sioux City, IA.*

PROJECT DIRECTOR: *Leah Seurer*
PHONE #: *605-216-4922*
Department: *Communication Studies*

WHAT IS THE PURPOSE OF THIS STUDY?

You are invited to participate in a research study about online and in-person education. You were selected as a possible participant because you have completed online nutrition education through the WIC clinic. The purpose of this research study is to compare in-person and online nutrition education at the WIC clinic in Sioux City, IA.

HOW MANY PEOPLE WILL PARTICIPATE?

Approximately 10 people will take part in this study. The interviews will only be held at the WIC clinic in Sioux City.

HOW LONG WILL I BE IN THIS STUDY?

Your participation in the study will last 15-30-minutes. There is only one interview involved.

WHAT WILL HAPPEN DURING THIS STUDY?

I will ask you a series of questions related to nutrition education. You have the option to answer or not answer a question as you wish. Each interview will be recorded, and the recording will be destroyed after transcription is complete and all identifiers are removed.

WHAT ARE THE RISKS OF THE STUDY?

There are no foreseeable risks.

WHAT ARE THE BENEFITS OF THIS STUDY?

You will receive \$10 in cash for participating in this study. In addition, we hope that, in the future, other people might benefit from this study because the WIC clinic will take the findings and use them to improve nutrition education in the future.

WILL IT COST ME ANYTHING TO BE IN THIS STUDY?

You will not have any costs for being in this research study.

WILL I BE PAID FOR PARTICIPATING?

You will be paid \$10 for being in this research study.

WHO IS FUNDING THE STUDY?

This study is funded by a Council on Undergraduate Research and Creative Scholarship grant.

ARE MY RECORDS CONFIDENTIAL?

The records of this study will be kept confidential to the extent permitted by law. In any report about this study that might be published, you will not be identified. Your study record may be reviewed by government agencies, Office of Human Subjects Protection and The University of South Dakota- Institutional Review Boards.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of destroying the recorded interviews within a week of the interview. At that time, the interviews will be transcribed, and all identifiers will be removed. The only person with access to the recordings will be the interviewer, Alexandria Logan. These interview answers will be used to summarize nutrition education experience and analyze future change. If we write a report or article about this study is written, we will describe the study results will be described in a summarized manner so that you cannot be identified.

IS THIS STUDY VOLUNTARY?

Your participation is voluntary. You may choose not to participate, or you may discontinue your participation at any time. Your decision whether to participate will not affect your current or future relations with The University of South Dakota.

WHOM MAY I CONTACT IF I HAVE QUESTIONS?

You may ask any questions you have now or later.

The researchers conducting this study are:

Leah Seurer
Alexandria Logan
605-216-4922 during the day

- You may call these numbers if you have questions, concerns, or complaints about the research.

If you have questions regarding your rights as a research subject, you may contact The University of South Dakota- Office of Human Subjects Protection at **(605) 677-6184**.

- You may also call this number about any problems, complaints, or concerns you have about this research study.
- You may also call this number if you cannot reach research staff, or you wish to talk with someone who is independent of the research team.

I give consent for my quotes to be used in the research; however, I will not be identified.

Please initial: **Yes** **No**

APPENDIX C

Interview Questions

1. How many children do you have?
2. How did you learn about the WIC program? (word of mouth? physician?)
3. What kind of nutrition education have you received in the past?
 - a. Did you receive training for how to use online nutrition education?
 - b. Do you have access to a computer?
4. Do you have problems getting your benefits/nutrition education?
5. Do you prefer in-person nutrition education or online? Why?
 - a. Which is more convenient?
 - b. What have you found more useful?
 - c. Do you like having the option to pick the topic online?
6. Do you like having the option to skip an appointment if you complete an online module?
 - a. If so, what do you like about it? (transportation, time)
 - b. If not, what do you think should be changed?
7. How long are your in-person sessions?
 - a. Do you wish they were longer or shorter?
 - b. Do you find them helpful?
8. How much time do online modules take?
9. Do you have someone to contact for nutrition education help if you need it?
10. Do you struggle to get the foods or recipes you need to make healthy meals?
11. Is there anything else I should know about your WIC nutrition education experience?

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