
Understanding Millennial Moms' Choices: A Nursing Survey About Childbirth Education in Primigravid Women

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ABSTRACT

Primigravid women, at some point, feel the need to gain education about childbirth. Our objective was to identify where primigravid millennial moms are seeking their childbirth education. This study, a quantitative nonexperimental survey research, was designed within the context of developmental transition theory. Childbearing women were recruited, considering the phenomenon to be studied. This purposive sample of 100 participants included primigravid millennial mothers (born between 1978 and 1994), status post vaginal birth, or emergent cesarean surgery, on a 455-bed, acute care facility. All participants were able to speak, understand, and read English or Spanish fluently. The author used a self-report survey to collect data from the participants. Primigravid women responded to a series of questions posed by the investigator. Considering the participants' variety of reading levels and their ability to communicate in writing, special attention was given to the simplicity and clarity of the questions on the survey. The responses provided by the participants suggested the need to enhance current childbirth education into culturally friendly and evidence-based technological information. Websites, apps, and social media are important information channels to reach and disseminate valuable childbirth education for millennial primigravid women. However, these channels are not currently being used to their full potential, considering the amount of information available and lack of guidance and clarity to disseminate trustworthy health-care information. By understanding millennial moms' choices, we gain the opportunity to deliver better education and support to Internet savvy women who are seeking online health-care information.

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INTRODUCTION

Pregnancy is a special moment in life identified for being a major period of transformation for new

parents (Deave et al., 2008). This period of transition into a new social status is full of significance and expectations. Transition is characterized

by those changes related to patterns of behavior, identities, roles, relationships, and abilities (Schumacher & Meleis, 1994). A transition can be characterized by single or multiple situational experiences that require preparation and knowledge. As a response to that, women facing the maternal phase of life and their families, develop confidence and coping skills to master the new roles and the transformation of relationships in those roles (Meleis et al., 2000). This transition is a major lifestyle change and requires preparation and many practical adjustments. Yet to ensure the family/communities' health and safety, it is critical to focus on the well-being of women by exploring the intersection of gender, health, and urban environments where this large segment of humanity establishes their living experience (Meleis et al., 2013).

Over the course of many years, there has been a variation in how women prepare for the arrival of their babies. Until the beginning of the 20th century, women learned about birth from the women in their surroundings, such as their sisters, mothers, grandmothers, and wise women in their communities. Starting in the last half of the century society witnessed the birth transition from home to hospital and from the midwife to obstetrician (Lothian & Hotelling, 2012). During this same period, the need arose for childbirth education, since the educational chain, mother–grandmother–midwives, was broken and giving birth became an inhospitable medical procedure. Another aspect to be considered in this scenario was that many childbearing women no longer stayed home, and this social fact changed the amount of time and interaction that women traditionally had with each other.

Coping with the transition into motherhood requires preparation and social support (Arcia et al., 2019). As women start their preparation for childbirth, a new social interaction develops. In these groups, new mothers-to-be gain more confidence, support, and equilibrium, and form a unique bond with other women who are going through a similar life transition (Nolan et al., 2012).

Couples began to seek parenthood education classes and expected that, after the classes, they would feel more confident as parents, more secure in taking care of their newborn child, and would have reduced their fear of childbirth (Karlström & Rising-Holmström, 2019). Antenatal classes could positively affect a couple's relationship (Ahlén et al., 2012; Karlström & Rising-Holmström, 2019), and provide pregnant women and their partners with understanding and knowledge in regard to the

Antenatal education is designed to guide women to think differently about birth, dismiss myths, and ultimately make positive informed decisions.

childbirth process, confidence, and self-realization (Barimani et al., 2018).

Developing confidence, as well as mastering pain coping techniques during labor, is one of the focal points during childbirth education. The creation of a realistic birth plan and the understanding that things can change, help the mother to be more mindful and empowered about the process of giving birth (Warriner et al., 2012). Considering the multitude of challenges surrounding pregnancy, the postpartum period, and parenting, the benefits of a supportive childbirth preparation group are many.

Childbirth classes improve the maternal sense of preparedness and control, and also promote a feeling of self-confidence (Tabib & Crowther, 2018). Antenatal education is designed to guide women to think differently about birth, dismiss myths, and ultimately make positive informed decisions (Lothian & Hotelling, 2012). For childbirth educators it is a challenge, nowadays, reaching new mothers and engaging them in a formal prenatal education program. What is changing?

Recently, other ways of preparation for childbirth are becoming more popular (Declercq et al., 2007; Savage, 2006; Yarrington et al., 2018). Individuals tend to look for learning strategies that best suit their needs. Traditional childbirth educators are facing challenges to engage and prepare a new generation of expectant parents in live classes (De Vries & De Vries, 2007; Declercq et al., 2007).

There is a cultural, social, and technological revolution influencing all aspects of human life. The technologization, defined as the rapid increase in ownership, access, and dependency on technology (Patel et al., 2014), is a major factor influencing changes in contemporary societies. These changes also influence the way the childbearing community prepares and deals with the arrival of a new baby in the family. More than ever before, millennial women have greater access to information about pregnancy and childbirth (Hauck et al., 2016).

Another important aspect of childbirth education is the amount of time new moms are willing to spend on getting ready for the transition. Spending mindful time preparing for the birth of a baby can influence how women are giving birth, as well as its outcomes (Warriner et al., 2012).

This study investigates a specific population, the Millennial Moms, mothers who were born between

1978 and 1994 (Weber, 2014). According to the Baby Center 2014 Millennial Mom Report, in the United States, 83% of new moms are millennials (as cited in Baby Center, 2014).

The relevance of this study is that by understanding millennial women's needs and expectations, regarding childbirth education, health-care providers will find ways of responding to the diversity of today's mothers and contribute positively to empowering them in making educated choices during the childbearing stage of life. Although many studies are describing the millennial generation, currently no articles or research have addressed the millennial mom's choices in childbirth preparation.

The purpose of this quantitative study is to identify where our primigravid millennial moms are seeking their childbirth education. The clinical research question is: What is the principal source of childbirth education to primigravid millennial mothers?

METHODS

Research Design

This quantitative study has a nonexperimental research design. The researcher intended to describe, via survey, choices and attitudes exhibited by first-time moms regarding the preparation for the birth of their child. As defined by Polit and Beck (2017), nursing survey research is designed to gather information about the prevalence, distribution, and interrelations of phenomenality within a population. The data was collected from the participants, though a self-report survey. Primigravid women were invited to respond to a series of questions (questionnaire) posed by the investigator. Questionnaires were self-administered; respondents read the questions and gave their answers in writing (Polit & Beck, 2017). In this study, considering the participants' variety of reading levels and their ability to communicate in writing, special attention was given to the simplicity and clarity of the questions in the survey.

In this study, a population of childbearing women was selected considering the phenomenon to be studied. This purposive sample includes primigravid millennial mothers (born between 1978 and 1994), status post vaginal birth, or emergent cesarean surgery in a 455-bed acute care facility. Both single and married women were targeted in a manner that reflected the cultural diversity of females assisted in this institution. Subjects were able to speak, understand, and read English or Spanish fluently.

Data Collection

The principal investigator and research assistants obtained the consent. A script was provided to all investigators involved in data collection. The data was collected from the participants, though a self-report survey called Understanding Millennial Moms' Choices. The survey was created and designed by the investigator. Before its application, the data collection instrument of this study was submitted to three experts in the field for content validity. Their feedback was analyzed, and, based on their contributions, improvements were done to enhance the effectiveness of each question. Internal consistency was not determinate since this is the first time the tool was used.

The data collection instrument was officially translated into Spanish by the hospital language coordinator to be used by the Spanish-speaking participants. An official hospital interpreter or Cyra-Phone was utilized, by the researcher's assistant who did not speak Spanish, during the consent obtaining process with the Spanish-speaking participants.

Data Analysis

The closed-ended survey responses were entered, by the primary investigator, into an Excel data file, and submitted to a statistician professional for data analysis. This quantitative data was analyzed descriptively using Statistical Package for the Social Sciences (SPSS) Version 22.0 (IBM, 2013). The findings are presented in this article.

Ethics

The study was conducted in agreement with the actual World Medical Association Declaration of Helsinki (2013). The Mount Sinai South Nassau Hospital's Nursing Research Evidence-Based Practice Council, as a subgroup of the Protocol Review Committee, determined the study status to be exempt from Institutional Review Board, also known as an independent ethics committee, ethical review board, or research ethics board (IRB). The study was approved, and all participants had their informed consent signed before answering the survey.

The subject was verbally invited to be part of the study based on inclusion criteria. We were unable to approach all 221 eligible participants during the study period. Of 114 mothers approached, 100 (87.72%) agreed to participate in the study. Therefore, a sample size of 100 questionnaires was obtained. Women who were multigravida, had an elective cesarean surgery, as well as those women

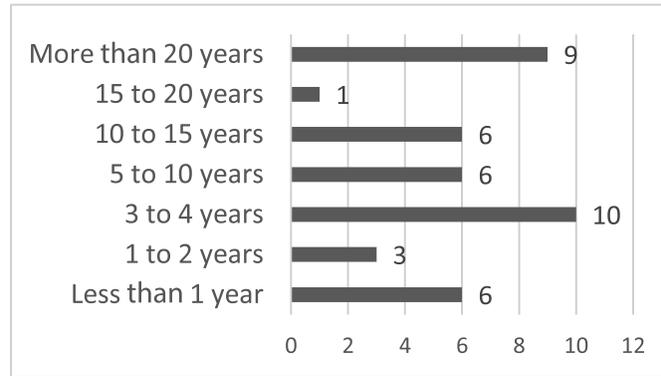


Figure 1. How long the women who are immigrants ($N = 41$) have been living in the United States.

who spoke a language other than English or Spanish were eliminated from the study due to exclusion criteria.

RESULTS

In total 100 primigravid women participated in this study by answering the questionnaire. These women ranged in age from 21 to 38 years with a median age of 29 years 6 months.

Demographically, 64% of the participants were born in the United States. Among participants born outside the United States were women who were born in Bulgaria, Colombia, Dominican Republic, Ecuador, El Salvador, France, Germany, Guatemala, Honduras, India, Israel, Nicaragua, Nigeria, Philippines, Puerto Rico, Russia, Sierra Leone, Trinidad, Uzbekistan, and Venezuela. Most of them had been in America for more than 5 years (Figure 1). Out of 100 questionnaires, 12% were answered in Spanish. It was noticed that several women born in Spanish countries were fluent in English. As typical of the state of New York, a significant cultural diversity was noticed among the participants.

Studies have demonstrated that families come to the United States with a deep determination to work hard and sacrifice for a better life for their children (Suárez-Orozco et al., 2012; Valdez et al., 2013).

Table 1 represents the results of the demographic variables of this study. An eight-category measure of mothers' educational attainment was used. This measure refers to the highest educational level at the time of the survey. Sixty-three percent of the participants had a college, bachelor's, master's, or doctoral degree. Most participants were married (69%) and 45% identified themselves as White/Caucasian, followed by 37% of Hispanic/Latino. The percentage of millennial mothers who were employed (67%) at survey time was significantly higher than unemployed participants (19%).

TABLE 1

Participants Demographics—Data Presented as a Percent of Sample ($N = 100$)

Variables	n (%)
Educational attainment	
<9 years	1
9–12 years, no degree	6
HS degree or equivalent	9
Tech, trade, vocational train	10
College, no degree	11
College degree	40
Master's degree	22
Doctoral degree	1
Marital status	
Single	8
In a relationship	14
Engaged	9
Married	69
Race or ethnicity	
Black/African American	11
Hispanic/Latino	37
White/Caucasian	45
Asian/Pacific Islander	5
Other	2
Employment status	
Employed	67
Unemployed	19
Stay-at-home mom	7
Student	7

Note. <9 years, 9–12 years, no degree, high school degree or equivalent, tech, trade, vocational train, college, no degree, college degree, master's degree, and doctoral degree.

Having in mind that informed choice is an expectation of today's parents (Hauck et al., 2016), all participants were questioned where they retrieved the childbirth information to prepare for the birth of their first baby. Since the dependent variables in

TABLE 2
Childbirth Education Variables—Data Presented as a Frequency of Responses

Variables	Frequency
Apps with pregnancy/childbirth information	46
Childbirth education class	21
Employer	1
Friends/family	42
General medical or health websites	12
Health plan	2
Maternity care provider	31
Pregnancy/childbirth websites for pregnant women	56
State or federal government agencies	1
Television	3

this question solicit multiple responses, (i.e., subjects selected all that applied) inferential statistical analyses were limited. The percent choosing each item is included in the descriptive statistics (Table 2).

According to the results, websites designed to promote information about pregnancy and childbirth were the most mentioned sources where our participants got their childbirth education. A frequency of 56 times was noted to this answer followed by the usage of mobile apps with pregnancy/childbirth information, which was mentioned 46 times by the participants.

Studies have shown that the 21st century women in childbearing age utilize the Internet as a resource for all types of information (Buultjens et al., 2012; Lewallen & Côté-Arsenault, 2014; Martin et al., 2013).

Not too long ago this reality was a little different, as can be observed in the results of research done in Australia between November 2010 and January 2011 which found that the Internet did not play a significant role in information seeking for more than half of the women in the study. The authors believed that the available sources of information did not meet the study participants' needs (Grimes et al., 2014). Two years after this study, however, websites, forums, and Google were pointed out by mothers as a primary source of information about pregnancy (Owen, 2013).

Participants expressed that technology-based media such as websites and apps containing pregnancy, childbirth, and baby care information, are their primary resource to obtain perinatal health education.

Laura Owen, a blogger, and mother, wrote about the practicality and drawbacks of relying on the Internet, especially through Google search, to obtain health information during pregnancy (Owen, 2013). A survey conducted by this same author showed that most of the respondents spent at least an hour a week searching for pregnancy information online.

According to the Citrix Mobile Analytics Report (2015), mobile health app subscribers using women's health monitoring apps decreased from 47% in 2013 to 14% in 2015. Top pregnancy-related apps listed by the report were "The Bump," "I'm Expecting," "Pregnancy," and "My Pregnancy." The report also demonstrates that the busy hours in which most data are generated is around 8–11 a.m. Global device enrollment increased by 72% from 2013, meaning that more and more people, in general, are using and managing mobile devices (Citrix Mobile Analytics Report, 2015).

The third popular choice by surveys in this study was for childbirth education received from family members and friends, chosen 42 times by the participants. The literature supports the fact that, for many young women, the primary communication source through which childbirth information is conveyed lays outside the formal health-care system (Edmonds et al., 2015). Friends and family are important sources of information in pregnant women's lives and even though they may be less knowledgeable, compared to maternity care providers, they give pregnant women advice during pregnancy (Verma et al., 2016).

In our survey, the maternity/health-care providers were mentioned 31 times as a source of childbirth education. Despite the fact that physicians and health-care providers give an orientation and education about pregnancy during prenatal visit at the clinic, childbearing women still require additional information to improve their confidence and used the Internet before a prenatal visit or immediately after a visit (Huberty et al., 2013; Sayakhot & Carolan-Olah, 2016). Since the information is available 24/7 on websites, forums, and Google, the Internet is used as a primary source of information about their pregnancy (Owen, 2013).

Although our results may reveal a change in the trend of having Internet resources, as opposed to having health-care providers as a primary resource for health-care education during pregnancy, it does not mean that first-time mothers don't value the information received from their maternity care provider. The results of a larger survey conducted by Declercq et al. (2013) shows that 76% of first-time mothers' participants rated the information about

TABLE 3

Childbirth Type Variables—Data Presented as a Percent of Sample (*N* = 100)

Variables of Birth Type (B.T.)	% Planned B.T.	% Experienced B.T.
Natural vaginal birth without pain medication	35	14
Vaginal birth with pain medication	63	53
Water birth	1	0
Cesarean surgery birth	1	33

pregnancy and childbirth received from maternity care providers as very valuable.

Data analysis results about the kind of birth the participants were planning to have and the kind of birth they end up experiencing are presented in Table 3. As will be reviewed later in this article, there is no statistically significant correlation between confidence in the birth planning, nor the kind of birth experience the participants had.

When questioned about the attendance at live childbirth classes, only 24% of participants answered yes. Among those who engaged in live childbirth classes 7% went to a 4-week series of classes, 13% attended a weekend class, 2% received private classes, and 6% stated to have other formats of classes. Among the participants who attended live childbirth classes, 33% stated that the classes took place in a hospital setting.

Considering the childbirth preparation experienced during pregnancy, women were asked to describe on a scale from 0 to 10, (where 0 means very poor and 10 very confident) how well prepared they believed they were for their childbirth experience. For this question, a mean of 7.34 was obtained. According to this study, the participants' sense of preparedness was not found to be statistically significant to influence the type of birth (Figure 2). Fifty percent of participants had the kind of childbirth they wanted to have, regardless of how well prepared they felt to be.

Using the survey question number 17 as an alternate dependent variable, analyses of all other variables was performed. The only relationship found to be significant were employment status and confidence in preparation. Unemployment status was found to be significantly related to higher levels of confidence in preparation, as compared to the student group (ANOVA with Bonferroni adjustment, mean difference = 2.46, $p = .027$, $N = 74$).

Our survey investigated the reason why most of the participants did not attend a live childbirth class. Their answers revealed that 42.7% were not interested in live childbirth classes, 29.3% did not have the time to go to the classes, and 10.7% stated that they could not find a group to attend. Some participants (8%) found live classes too expensive and 9.3% did not attend for different reasons.

One of our last five questions was: "Did you participate in online childbirth classes?" To that question, 95% of the participants answered "no." As an author, I have two thoughts on that: #1: Educational classes require the availability of time from the students and millennial moms are seeking fast answers, straight to the point of their needs. Substantiating results from Citrix Mobile Analytics Report (2015) 4.6 minutes is a daily average mobile data subscriber engagement time and the longest mobile data engagement periods of 9 minutes occur at noon, 9 p.m. and 10 p.m. If millennial moms are searching on their mobile phone for childbirth education, most likely they do not want to spend too much time on one topic, just like the rest of the population using mobile smartphones and tablets. #2: Online classes with credible information can be expensive while several websites provide evidence-based, pregnancy-related topics such as diet, childbirth education, and breastfeeding, free of charge. Some examples can be found listed in Figure 3.

Participants were asked, "What was the name of the online childbirth program you participated in?" Their answers were not very specific to a program of formal classes, considering the significantly large amount of diverse information that can be retrieved from sites mentioned. Some responses were: "I'm expecting"; "I don't remember" "BabyCenter.com"; and "YouTube."

From a given list of websites, participants were asked if, during their pregnancy, they used any one of the listed websites at least once a week to educate themselves about pregnancy, labor, birth, and/or postpartum. The list of websites was created based on the professional experience of the author as a parent and child educator. Participants could choose more than one answer to this question and an average of three websites were chosen. The participants could also include other websites not mentioned in the survey questionnaire. The content of the websites was not reviewed nor analyzed in this study.

According to their answers, the number one website used by the participants was the Baby Center (Table 4). As a member of the Johnson & Johnson

Preparedness for Childbirth Experience (n=100)

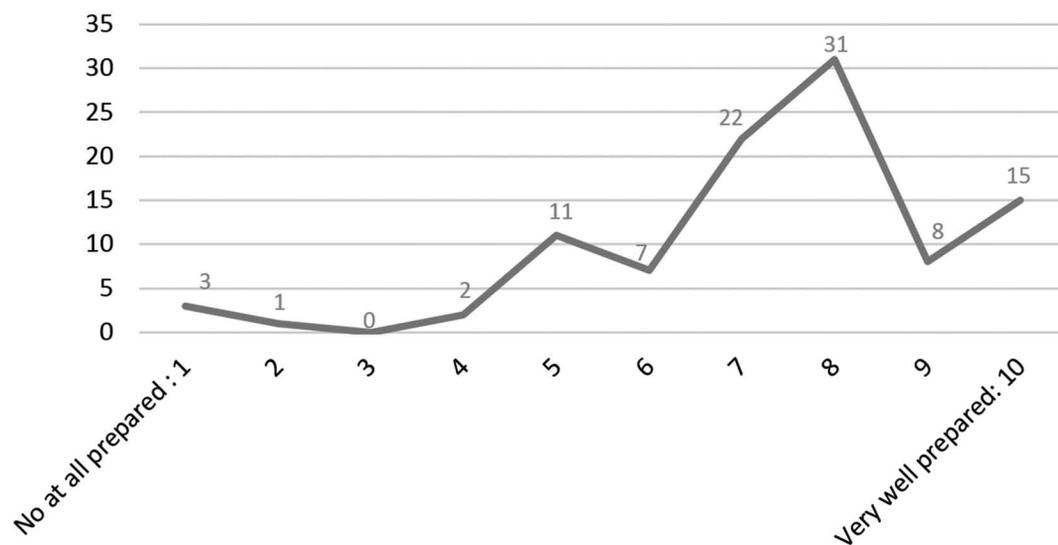


Figure 2. On a scale from 0 to 10, where 0 means very poor and 10 very confident: how well prepared for your childbirth experience do you think you were, considering the childbirth preparation you had during pregnancy?

Institution Name	Website address
American Academy of Pediatrics	aap.org
American College of Nurse-Midwives (ACNM)	midwife.org
Breastfeeding Partners	breastfeedingpartners.org
Centers for Disease Control and Prevention	cdc.gov
Childbirth Connection	childbirthconnection.org
Healthy Mom & Baby	Health4Mom.org
Lamaze International	lamaze.org
March of Dimes	marchofdimes.org
Choose My Plate	choosemyplate.gov
National Institutes of Health (NIH)	nih.gov
WIC Program - Women, Infants and Children	health.ny.gov/prevention/nutrition/wic/

Figure 3. Sample of websites providing evidence-based, free of charge, pregnancy-related topics.

family companies, Baby Center LLC claims to reach over 45 million parents a month from all over the world through its 11 owned and operated properties, in 9 different languages. In the United States, according to babycenter.com, 8 in 10 new and expectant moms online utilize Baby Center each month, which makes this website and app the most popular pregnancy and parenting digital destination (Baby Center, 2017).

The search engine Google was the second most chosen website by those surveyed. On this platform new mothers to be can find information related to any topic that they can imagine. However, the results of their search do not necessarily give them access to valuable professional health information or evidence-based guidance. To illustrate this state-

ment, the author of this study googled the topic “Is it normal to feel dizzy during pregnancy?” and, in 0.52 seconds she gained access to 12,400,000 results/answers to that question. The results appear as per order of relevance according to Google Search Engine Optimization—SEO (Google, 2010). By using an SEO methodology as a strategy, any website can increase their probability of obtaining a high-ranking placement on Google search engine results pages (SERPs), regardless of the accuracy of the information being conveyed to their visitors. This unimaginable amount of results obtained in less than a second can be very overwhelming to a new mother-to-be seeking health-care information online. In addition, it is very difficult for new mothers to choose reliable resources online considering all

TABLE 4

Rank of Websites Visited by the Participants During Pregnancy for Online Health-Care Information

Rank	Website	Number of Times Mentioned by Participants
1	Baby Center	75
2	Google Search Engine	69
3	The Bump	50
4	YouTube	34
5	Baby Bump	27
6	Other (websites in)	27
7	Pinterest	19
8	Facebook	16
9	La Leche League	7
10	Lamaze Parents	4
11	Childbirth Connection	0

the biases and advertisements presented in some of the websites.

Website resources such as Childbirth Connection, La Leche League, and Lamaze were among the least visited websites by the participants of this study. Unfortunately, this finding exemplifies the lack of guidance that mothers have when it comes time to choose online resources with solid evidence-based information.

By visiting some of the pregnancy, birth and infant care-related websites and apps chosen by the participants, it became clear to the author that the impetus of widespread online health-care information is greatly supported by multinational companies who see this as a perfect marketing area to present their pregnancy/mother/baby-related products to a very specific population.

The last question asked to the participants was, “Did you wish you had done something different to prepare for the birth of your first baby?” The participants who answered yes were invited to provide a short explanation.

Among the 12 questionnaires answered in Spanish, only two participants said they had wished that they prepared differently for the birth of their first baby. The first one wished she had done more exercises during pregnancy and the second one wished she had communicated with the doctor about the pain she was feeling during labor, instead of talking to the nurse. She felt that the nurse did not understand her well.

Of the 86 survey questionnaires that were answered in English, most of the participants considered themselves well prepared to give birth, however

38.3% of participants stated they wished they had done something different to prepare for the birth of their first baby. Some of the comments were that the participants wished they had done more exercise for the labor, attended Lamaze childbirth classes, and breastfeeding classes, spoken up more at doctor visits during pregnancy, received more information from OB-GYN, and researched/received more information on actual labor techniques and procedures. According to Mueller et al. (2020), women who are knowledgeable about the risks and benefits of intrapartum interventions such as induction, augmentation, and cesarean surgery, may have a greater capacity to be involved in the decision-making related to those medical procedures.

A few participants wished they had had everything prepared at least a month in advance to go to the hospital. Some participants verbalized they wished to have had more education about potential issues that can arise during labor and what those implications were. Others wished to have had more education on cesarean surgery and to have known more exercises to change the baby’s position during labor.

Qualitative data analysis could have been done to better understand these open-ended answers; however, the author believes that the data collection ended before the saturation of data was achieved for the topic. Therefore, a simple description of statements is presented in this article.

DISCUSSION

By applying the transition theory to the human phenomena of giving birth and becoming a mother, it is possible to observe a complex and multidimensional social movement, that over time, causes changes in identities, roles, relationships, abilities, and patterns of behavior (Meleis, 2011). As professional nurses, we are the primary caregivers of clients and their families who are undergoing transitions (Meleis, 2011), and, in collaboration with other childbirth educators, we have the responsibility to assure that they have access to all available tools to prepare efficiently for the arrival of their babies.

Participants expressed that technology-based media such as websites and apps containing pregnancy, childbirth, and baby care information, are their primary resource to obtain perinatal health education. The second most utilized resource for childbirth education chosen by the participants of this study was friends/family, followed by maternity health-care providers and live childbirth education classes.

Our findings correlated with a recent study that found an increasing number of U.S. adults that use the Internet, popular social media sites, and e-mail at least occasionally, whether accessed with a smartphone or computer. Women living in urban areas are more likely to use and share information on these platforms (Duggan & Smith, 2013; Duggan et al., 2015).

Although individuals may obtain medical and educational information in a variety of different ways (Asiodu et al., 2015), the complexity of determining and evaluating the effectiveness of certain resources is a contributing factor in why there is still no evidence-based, standardized guidance for electronic-based health-care resources. With the advent of social media and increased Internet usage and access, creating more innovative interventions to engage millennial mothers must be a priority of health care.

When we put health-care education in the spotlight of technology, it is notable that this industry is embracing Internet mobile technology. More research is suggested to investigate the evidence base behind the vast educational resources available online.

Internet access, and engagement on social media platforms, especially through mobile devices was noticed to be of importance for this study's target population. With no signs of slowing, mobile device usage is a growing social segment, in both volume and sophistication, for consumer and business markets (Citrix Mobile Analytics Report, 2015). Thus, social media technology may be one way to address childbirth education.

This study shows that social support remains an essential aspect of a healthy childbirth experience and women are widely connected to family members and friends to get the information they need to walk through childbearing age. Another study also highlighted the need millennial women have for social support and how to seek it through online and offline communities (Arcia et al., 2019).

Through the results of this study, the author noticed a certain invisibility of the professional nurse during the process of parent education for childbirth. Even though health-care providers were not ranked as the top influential source of information about childbirth, the author believes that health-care providers, especially nurses, retain a professional responsibility to provide childbirth education and counseling to all pregnant women.

Childbirth educators must find a way to establish their presence in social media spaces to spread health information, based on scientific evidence, free of biases, and commercial influences. At the same time, childbirth educators should be mindful that electronic spaces designed to promote health information for millennial mothers must be visually attractive, interactive, rich in illustrations, and capable of transmitting valuable information using few written words.

IMPLICATIONS FOR PRACTICE

Quality health-care practices demand the use of evidence-based information. The responses provided by the participants in this study suggested the need to enhance current childbirth information into culturally friendly and evidence-based technological information. Websites, apps, and social media are important information channels to reach and disseminate valuable childbirth education for millennial primigravid women. However, these channels are not currently being used to their full potential, considering the amount of information available and lack of guidance and clarity to deliver trustworthy health-care information.

These findings are fertile areas with much research to be explored. By understanding millennial moms' choices, childbirth educators gain the opportunity to create better educational strategies and support to Internet savvy women who are seeking online health-care information. Data from this study can be used to design the structure and content for Internet-driven educational strategies that aim to promote informed decision-making and women engagement in childbirth education.

LIMITATIONS

The perspectives presented in this study were from a small size purposive sample of mothers, obtained at a single facility, located in a specific geographic region of the United States. Additional research is needed to ascertain where primigravid and multiparous women, with a diverse age range, seek childbirth education and information to prepare for the arrival of their babies.

Because the use of computer-mediated technologies (such as websites, apps, and social media) was an emergent theme from the study, further research specifically focused on the use of Internet-based applications and childbirth education is recommended. Aspects such as content quality and the

presence of bias should be analyzed to promote optimized technology-based guidance to childbearing women.

REFERENCES

- Ahldén, I., Ahlehagen, S., Dahlgren, L. O., & Josefsson, A. (2012). Parents' expectations about participating in antenatal parenthood education classes. *The Journal of Perinatal Education, 21*(1), 11–17. doi:10.1891/1058-1243.21.1.11
- Arcia, A., Stonbraker, S., & Warner, E. (2019). Continuing education module—Information needs and information-seeking processes of low-income pregnant women in relation to digital maternity education resources. *The Journal of Perinatal Education, 28*(3), 151–162. doi:10.1891/1058-1243.28.3.151
- Asiodu, I. V., Waters, C. M., Dailey, D. E., Lee, K. A., & Lyndon, A. (2015). Breastfeeding and use of social media among first-time African American mothers. *Journal of Obstetric, Gynecologic & Neonatal Nursing, 44*(2), 268–278. doi:10.1111/1552-6909.12552
- Baby Center 21st Century Mom® Insights Series, 2014 Millennial Mom Report. (2014, January). https://www.babycenterbrandlabs.com/docs/BabyCenter_2014_Millennial_Mom_Report.pdf
- Baby Center, L.L.C. (2017). *About*. <https://www.babycenter.com/about>
- Barimani, M., Frykedal, K. F., Rosander, M., & Berlin, A. (2018). Childbirth and parenting preparation in antenatal classes. *Midwifery, 57*, 1–7. doi:10.1016/j.midw.2017.10.021
- Buultjens, M., Robinson, P., & Milgrom, J. (2012). Online resources for new mothers: Opportunities and challenges for perinatal health professionals. *The Journal of Perinatal Education, 21*(2), 99–111. doi:10.1891/1058-1243.21.2.99
- Citrix Mobile Analytics Report (Rep.). (2015). Citrix website: https://www.citrix.com/content/dam/citrix/en_us/documents/products-solutions/citrix-mobile-analytics-report-february-2015.pdf
- De Vries, C. A., & De Vries, R. G. (2007). Childbirth education in the 21st century: An immodest proposal. *Journal of Perinatal Education, 16*(4), 38–48. doi:10.1624/105812407X244958
- Deave, T., Johnson, D., & Ingram, J. (2008). Transition to parenthood: The needs of parents in pregnancy and early parenthood. *BMC Pregnancy and Childbirth, 8*(1). doi:10.1186/1471-2393-8-30
- Declercq, E. R., Sakala, C., Corry, M. P., & Applebaum, S. (2007). Listening to mothers II: Report of the second national U.S. survey of women's childbearing experiences. *Journal of Perinatal Education, 16*(4), 9–14. doi:10.1624/105812407X244769
- Declercq, E. R., Sakala, C., Corry, M. P., Applebaum, S., & Herrlich, A. (2013). *Listening to mothers SM III: Pregnancy and birth*. Childbirth Connection.
- Duggan, M., & Smith, A. (2013, December). *Social Media Update 2013*. Pew Research Center. <https://www.pewresearch.org/internet/2013/12/30/social-media-update-2013/>
- Duggan, M., Ellison, N. B., Lampe, C., Lenhart, A., & Madden, M. (2015, January). *Social media update 2014*. Pew Research Center. <https://www.pewresearch.org/internet/2015/01/09/social-media-update-2014/>
- Edmonds, J. K., Cwierniewicz, T., & Stoll, K. (2015). Childbirth education prior to pregnancy? Survey findings of childbirth preferences and attitudes among young women. *The Journal of Perinatal Education, 24*(2), 93–101. doi:10.1891/1058-1243.24.2.93
- Google. (2010, October). *Search engine optimization starter guide*. <https://static.googleusercontent.com/media/www.google.com/en/webmasters/docs/search-engine-optimization-starter-guide.pdf>
- Grimes, H. A., Forster, D. A., & Newton, M. S. (2014). Sources of information used by women during pregnancy to meet their information needs. *Midwifery, 30*(1), e26–e33. doi:10.1016/j.midw.2013.10.007
- Hauck, Y., Fisher, C., Byrne, J., & Bayes, S. (2016). Mindfulness-based childbirth education: Incorporating adult and experiential learning with mindfulness-based stress reduction in childbirth education. *The Journal of Perinatal Education, 25*(3), 162–173. doi:10.1891/1058-1243.25.3.162
- Huberty, J., Dinkel, D., Beets, M. W., & Coleman, J. (2013). Describing the use of the internet for health, physical activity, and nutrition information in pregnant women. *Maternal and Child Health Journal, 17*(8), 1363–1372. doi:10.1007/s10995-012-1160-2
- IBM Corp. (2013). *IBM SPSS statistics for windows (22)*. IBM Corp.
- Karlström, A., & Rising-Holmström, M. (2019). Parental groups during pregnancy and the child's first year: Swedish parents experiences. *The Journal of Perinatal Education, 28*(1), 19–27. doi:10.1891/1058-1243.28.1.19
- Lewallen, L. P., & Côté-Arsenault, D. Y. (2014). Implications for nurses and researchers of internet use by childbearing women. *Nursing for Women's Health, 18*(5), 392–400. doi:10.1111/1751-486X.12147
- Lothian, J. A., & Hotelling, B. A. (2012). Continuing education module top 10: Tips on teaching Lamaze classes. *The Journal of Perinatal Education, 21*(4), 248–252. doi:10.1891/1058-1243.21.4.248
- Martin, D. K., Bulmer, S. M., & Pettker, C. M. (2013). Childbirth expectations and sources of information among low- and moderate-income nulliparous pregnant women. *The Journal of Perinatal Education, 22*(2), 103–112. doi:10.1891/1058-1243.22.2.103
- Meleis, A. I. (2011). *Theoretical nursing: Development and progress* (5th ed.). Wolters Kluwer Health/Lippincott Williams & Wilkins.
- Meleis, A. I., Birch, E. L., & Wachter, S. M. (2013). *Women's health and the world's cities*. University of Pennsylvania Press. <http://site.ebrary.com/id/10642711>
- Meleis, A. I., Sawyer, L. M., Im, E.-O., Messias, Hilfinger, K. D., & Schumacher, K. (2000). Experiencing transitions: An emerging middle-range theory. *Advances in Nursing Science, 23*(1), 12–28. doi:10.1097/00012272-200009000-00006
- Mueller, C. G., Webb, P. J., & Morgan, S. (2020). The effects of childbirth education on maternity outcomes

- and maternal satisfaction. *The Journal of Perinatal Education*, 29(1), 16–22. doi:10.1891/1058-1243.29.1.16
- Nolan, M. L., Mason, V., Snow, S., Messenger, W., Catling, J., & Upton, P. (2012). Making friends at antenatal classes: A qualitative exploration of friendship across the transition to motherhood. *The Journal of Perinatal Education*, 21(3), 178–185. doi:10.1891/1058-1243.21.3.178
- Owen, L. (2013, June 26). *A digital life: Pregnancy in the age of Google is weird, scary and (maybe) easier*. Gigaom. <https://gigaom.com/2013/06/26/pregnancy-in-the-digital-age/>
- Patel, F., Sooknanan, P., Rampersad, G., & Mundkur, A. (2014). *Information technology, development, and social change*. Routledge.
- Polit, D. F., & Beck, C. T. (2017). *Nursing research: Generating and assessing evidence for nursing practice* (10th ed.). Wolters Kluwer Health.
- Savage, J. S. (2006). The lived experience of knowing in childbirth. *The Journal of Perinatal Education*, 15(3), 10–24. doi:10.1624/105812406X118986
- Sayakhot, P., & Carolan-Olah, M. (2016). Internet use by pregnant women seeking pregnancy-related information: A systematic review. *BMC Pregnancy and Childbirth*, 16(1). doi:10.1186/s12884-016-0856-5
- Schumacher, K. L., & Meleis, A. I. (1994). Transitions: A central concept in nursing. *Image: The Journal of Nursing Scholarship*, 26(2), 119–127. doi:10.1111/j.1547-5069.1994.tb00929.x
- Suárez-Orozco, C., Birman, D., Casas, J. M., Nakamura, N., Tummala-Narra, P., & Zárate, M. (2012). *Crossroads: The psychology of immigration in the new century*. American Psychological Association, Presidential Task Force on Immigration. <http://www.apa.org/topics/immigration/immigration-report.pdf>. <http://www.apa.org/topics/immigration/report.aspx>
- Tabib, M., & Crowther, S. (2018). Service evaluation of relaxation workshops for pregnant women. *The Journal of Perinatal Education*, 27(1), 10–19. doi:10.1891/1058-1243.27.1.10
- Valdez, C. R., Lewis Valentine, J., & Padilla, B. (2013). Why we stay: Immigrants' motivations for remaining in communities impacted by anti-immigration policy. *Cultural Diversity and Ethnic Minority Psychology*, 19(3), 279–287. doi:10.1037/a0033176
- Verma, B. A., Nichols, L. P., Plegue, M. A., Moniz, M. H., Rai, M., & Chang, T. (2016). Advice given by community members to pregnant women: A mixed methods study. *BMC Pregnancy and Childbirth*, 16(1). doi:10.1186/s12884-016-1146-y
- Warriner, S., Williams, M., Bardacke, N., & Dymond, M. (2012). A mindfulness approach to antenatal preparation. *British Journal of Midwifery*, 20(3), 194–198. doi:10.12968/bjom.2012.20.3.194
- Weber, S. (2014). *Digital women influencers: Millennial moms*. https://www.webershandwick.com/uploads/news/files/MillennialMoms_ExecSummary.pdf
- World Medical Association Declaration of Helsinki. (2013). Ethical principles for medical research involving human subjects. *JAMA*, 310(20), 2191. doi:10.1001/jama.2013.281053
- Yarrington, C. D., Radoff, K., & Zera, C. A. (2018). Online birth plans and anticipatory guidance: A critical review using web analytics and crowdsourcing. *The Journal of Perinatal Education*, 27(1), 32–37. doi:10.1891/1058-1243.27.1.32

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