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Young Women's Knowledge About Fertility and Their Fertility Health Risk Factors

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Abstract

Objective

To explore the relationships among young women's demographic characteristics, their self-perceived and actual knowledge about fertility, and their fertility health risk factors.

Design

A quantitative, cross-sectional study.

Setting

Online survey.

Participants

Young women between the ages of 18 and 24 years (N = 342).

Methods

We used an online survey to collect data from young women regarding their demographic characteristics, their self-perceived and actual knowledge about fertility, and their fertility health risk factors. We used multiple linear regression to explore the relationships among these factors.

Results

Participants were mainly White, had some form of college education, and used a variety of contraception methods. Regression modeling indicated that participants' self-perceived knowledge and actual knowledge about fertility and their methods of contraception were significantly associated with their fertility health risks (R^2 = .13, p < .001). Participants who had higher actual scores of knowledge about fertility and who used fertility awareness methods had fewer self-reported fertility health risk factors. A greater level of self-perceived knowledge about fertility was associated with more fertility health risk factors. Age, education level, and pregnancy history were not significantly associated with fertility health risks.

Conclusion

Our findings provide evidence that knowledge about fertility is important to enhance fertility self-care for young women. The significant relationship between young women's knowledge about fertility and their fertility health risks highlights the need to assess their knowledge and teach them about fertility as important components of preconception care. Such education may help them avoid fertility health risks and protect young women's current and future fertility.

Keywords

female fertility, knowledge, risk, young adult

Introduction

Fertility changes throughout a woman's reproductive years and many factors, such as lifestyle, age, and certain diseases, can affect fertility (Macaluso et al., 2010). Fertility health risks refer to a number of potentially modifiable risk factors that could compromise a woman's ability to conceive and increase the risk of infertility (American Society for Reproductive Medicine, 2017). Awareness of these factors may affect how women make certain lifestyle choices regarding their fertility and fertility-related outcomes. Because of misconceptions about fertility, some young women may use contraception inconsistently despite their intention to avoid pregnancy (Reed, England, Littlejohn, Bass, & Caudillo, 2014). Although many young women value their fertility and motherhood, they may not know that risky sexual behaviors or sexually transmitted infections can increase the risk of infertility (Goundry et al., 2013, Lundsberg et al., 2014, Quach and Librach, 2008). Furthermore, young women are often unaware that abnormal menstrual cycles (e.g., irregular cycles, anovulation, excessive bleeding, or pain) may indicate potential fertility and other reproductive health problems (Barron, 2013, Lundsberg et al., 2014, Sabarre et al., 2013).

Knowledge about fertility is a dynamic concept that encompasses many components. For women, this knowledge includes information regarding the menstrual cycle, the pregnancy potential in each menstrual cycle and at different life stages, and the risks of infertility (Mu, 2016). A number of researchers from Sweden (Tydén, Skoog Svanberg, Karlström, Lihoff, & Lampic, 2006), Israel (Hashiloni-Dolev, Kaplan, & Shkedi-Rafid, 2011), Italy (Rovei et al., 2010), Finland (Virtala, Vilska, Huttunen, & Kunttu, 2011), the United States (Peterson, Pirritano, Tucker, & Lampic, 2012), New Zealand (Lucas, Rosario, & Shelling, 2015), and Hong Kong (Chan, Chan, Peterson, Lampic, & Tam, 2015) assessed college-age women's knowledge about changes in female fertility throughout the reproductive years and the success rates of assisted reproductive technology (ART). Findings from these studies indicated that many college-age women overestimated the success rates of natural conception and ART at different ages. Guzman, Caal, Peterson, Ramos, and Hickman (2013) surveyed a group of young women who used fertility awareness methods (FAMs) about their knowledge of female fertility within each menstrual cycle. They found that many of these young women had little or inaccurate knowledge about fertility, which may affect the effectiveness of FAMs to prevent pregnancy (Guzman et al., 2013). García, Vassena, Trullenque, Rodríguez, and Vernaeve (2015) examined 229 oocyte donors' knowledge and awareness of female fertility changes within the menstrual cycle, age-related fertility decline, and ART. Almost half of these donors failed to identify the correct ovulation time and the age range for optimal female fertility (García et al., 2015).

Enhanced knowledge of fertility can positively affect women's reproductive life planning and timing of conception (García et al., 2016, Maeda et al., 2018). For example, a young women's knowledge about fertility may influence her desired age for childbearing and conception planning (Abiodun et al., 2018, Daniluk and Koert, 2015, Stern et al., 2013, Wojcieszek and Thompson, 2013). In a randomized controlled trial, Stern et al. (2013) found that women who were taught about age-related fertility decline wished to have their children earlier than women in the two control groups. Similarly, after exposure to an online educational brochure regarding age-related fertility changes, young adults wanted to start and complete childbearing sooner than members of the control group (Wojcieszek & Thompson, 2013). However, less is known about the relationship between young women's knowledge about fertility and their fertility health risks. Understanding this relationship may help health care providers provide individualized consultation about fertility and reproductive issues. Therefore, the purpose of our study was to explore the relationships among young women's demographic factors, their self-perceived and actual knowledge about fertility, and their fertility health risks.

> *Little is known about the relationships among young women's demographic factors, their knowledge of fertility, and their fertility health risks.*

Methods

Design

This was a cross-sectional survey study. The study was approved by the institutional review board and the Online Survey Review Group from Marquette University. We used an online questionnaire powered by Qualtrics to collect data.

Participants

Young women were included if they were between the ages of 18 and 24 years, were fluent in English, and had computer and Internet access. A convenience sample was sought from two different sources. We recruited young women from a college campus who were presumed to use a variety of methods of contraception. We also recruited young women who used FAMs for contraception from a FAM Facebook page.

Procedure

Sample recruitment occurred from December 2016 through January 2017. The recruitment occurred concurrently through the university and the FAM Facebook page. For the campus recruitment, an e-mail invitation with the survey link was sent to a list of 600 randomly selected e-mail addresses obtained from the university. We also posted the study information and the survey link on the FAM Facebook page.

Participants accessed the online survey through a survey link and were required to read and sign the study consent before they proceeded to the survey. On average, it took participants 10 to 15 minutes to complete the survey. A $10 e-gift card was offered as an incentive for participation. Participants were asked to e-mail the researcher at the completion of the survey to claim their e-gift card to ensure the anonymity of their responses.

Measures

The online questionnaire consisted of 81 items to collect data on participants' demographic characteristics, self-perceived and actual knowledge about fertility, and fertility health risk factors. The initial questionnaire was developed and evaluated by a group of content and survey design experts. We then conducted individual cognitive interviews with 10 young women to evaluate the presentation, flow, clarity, and comprehension of the questionnaire (Dillman, Smyth, & Christian, 2009). Minor revisions were made based on feedback from the experts and the 10 participants.

Demographic data (15 questions)

Demographic items were developed based on previous studies about knowledge of fertility (Lundsberg et al., 2014, Peterson et al., 2012, Tydén et al., 2006). The demographic questions collected information regarding age, ethnicity, education, relationship status, methods of contraception, and pregnancy history.

Self-perceived knowledge about fertility (22 items)

We adapted the Knowledge of Fertility and Fertility Preservation Scale to assess young women's self-perceived knowledge about fertility (Jukkala, Meneses, Azuero, & McNees, 2012). With the scale, women self-rate their degree of knowledge about human reproduction, fertility, and the effect of cancer treatment on fertility. The Knowledge of Fertility and Fertility Preservation Scale consists of 22 items with five subscales: Normal Reproductive Function, General Information About Fertility, Treatment Factors Affecting Fertility, Infertility Information, and Alternative Parenting Options. Jukkala and colleagues (2012) reported that the overall Cronbach's alpha for the entire scale was .91 and for the five subscales were .85 (Normal Reproductive Function), .73 (General Information About Fertility), .80 (Treatment Factors Affecting Fertility), .80 (Infertility Information), and .78 *(*Alternative Parenting Options). For this study, we only used the subscales Normal Reproductive Function (4 questions) and General Information About Fertility (4 questions) to measure self-perceived knowledge about fertility.

The original answer choices for each of the questions on the subscales are *a little*, *some*, and *a lot*. However, in the cognitive interviews, young women expressed their difficulties in selecting the right level when they felt they had no knowledge regarding certain fertility topics. Therefore, the option of *none* was added. To quantify participants' levels of self-perceived knowledge about fertility, *none* was assigned 1 point, *a little* was assigned 2 points, *some* was assigned 3 points, and *a lot* was assigned 4 points. A total score based on the 4-point Likert-type scale was calculated for each participant, and a higher score indicated a greater level of self-perceived knowledge about fertility.

Actual fertility knowledge (26 items)

We assessed participants' actual fertility knowledge with the use of the newly developed Mu Fertility Knowledge Assessment Scale (Mu, 2017). The initial items of the scale were developed through a comprehensive literature review, and the items were evaluated and refined through three rounds of Delphi discussion among a group of

10 fertility knowledge content experts. The refined Mu Fertility Knowledge Assessment Scale has 26 items and displays acceptable internal consistency, with Cronbach's alpha of .74.

The Mu Fertility Knowledge Assessment Scale is used to assess young women's knowledge about fertility changes within the menstrual cycle and throughout the lifecycle, the effects of lifestyle factors on female fertility and conception, and the risks of infertility associated with age. The answer choices are *true*, *false*, and *don't know*. Scoring is continuous and not based on a discrete cutoff score. A correct answer receives 1 point, and an incorrect or *don't know* response receives 0 points. Total points are divided by the total number of questions and multiplied by 100 to yield a possible score from 0 to 100. Higher scores indicate greater actual knowledge about fertility.

Fertility health risks (18 items)

Participants' fertility health risks were assessed with the FertiSTAT, a validated self-assessment tool that is used to evaluate women's reproductive history and lifestyle factors that may affect their fertility (Bunting & Boivin, 2010). The FertiSTAT contains 22 items of fertility risk factors (2 age-related, 18 female-related, and 2 male-related factors). We included only the 18 female-related factors in the survey. The response scale is *yes* for the presence of the factor or *no* for the absence of the factor. Participants could also choose *not sure* if they were uncertain about whether specific risk factors were personally relevant. The total number of fertility health risk factors was summed for each participant.

Analysis

Age, level of self-perceived knowledge about fertility, score of actual knowledge about fertility, and number of fertility health risk factors were treated as continuous variables; education, pregnancy history, and method of contraception were treated as categoric variables. For level of education, participants were categorized into one of three groups: high school education or less, some college education, and college degree or higher. For method of contraception, participants were dichotomized into two groups: used FAMs and used other methods. For pregnancy history, participants were categorized into pregnancy and no-pregnancy groups.

> *Our findings show that young women's self-perceived and actual knowledge about fertility and their methods of contraception were significantly associated with their fertility health risks.*

We provided a summary of the demographic characteristics for the whole sample. We evaluated the differences between FAM users and users of other methods of contraception using the Pearson chi-square test. To control for familywise error rate with multiple statistical tests, we applied Bonferroni adjustment by dividing an alpha value of .05 by the number of variables we compared ($n = 5$). We conducted *t* tests or analyses of variance to compare the differences of fertility health risk factors (the dependent variable) based on level of education, method of contraception, and pregnancy history. We used standard multiple linear regression analysis to explore the relationships among demographic characteristics, self-perceived fertility knowledge, actual fertility knowledge, and fertility health risks. Statistical analyses were conducted using SPSS (Version 22), and the significance level was set at $p < .05$.

Results

Participants

A total of 422 women, 159 from the university e-mail list and 263 from the FAM Facebook page, accessed the online survey; 342 (81%) met inclusion criteria and were retained in the analysis. The sample consisted primarily of young women who were White (83.3%), Catholic (74%), and heterosexual (93.6%). Most of the participants (95.6%) had some college education or college degrees. More than half of the participants were nulligravid, and 32.2% had experienced at least one pregnancy (see Table 1). Participants reported the use of zero to five

different methods of contraception, and many (62.0%) reported the use of one or two methods in their lifetimes. The most frequently used methods were hormonal contraceptives, barrier methods, FAMs, and withdrawal.

Table 1. Demographic Characteristics of Participants (N = 342)

Characteristic	***n* (%)**
Race/ethnicity	
White	285 (83.3)
Hispanic/Latina	32 (9.3)
Asian and Pacific Islander	15 (4.4)
American Indian	5 (1.5)
Black or African American	5 (1.5)
Religion	
Catholic	253 (74)
Protestant	53 (15.1)
Other religion	11 (3.3)
No religion	25 (7.6)
Education level	
High school or less	15 (4.4)
Some college	170 (49.7)
College degree or higher	157 (45.9)
Sexual orientation	
Heterosexual or straight	320 (93.6)
Asexual	11 (3.2)
Bisexual	6 (1.8)
Other (pansexual, queer, questioning)	4 (1.2)
Prefer not to answer	1 (0.3)
Relationship status	
Single	102 (29.8)
In a relationship, not cohabitating	75 (21.9)
Not married, cohabiting	15 (4.4)
Married	143 (41.8)
Other	7 (2.1)
Pregnancy history	
Yes	110 (32.2)
No	232 (67.8)

Comparison between participants who had used FAMs and participants who had never used FAMs showed that FAM users were older, married, and more likely to have experienced at least one pregnancy compared with participants who had never used FAMs. More non-FAM users had used hormonal contraceptives and intrauterine devices compared with FAM users. However, more FAM users had used four or more methods of contraception compared with non-FAM users in their lifetimes (see Table 2).

Table 2. Comparison of the Pattern of Contraception Use Between FAM Users (n = 165) and Non-FAM Users (n = 177)

Patterns of Contraception Use	**FAM Users, *n* (%)[a]**	**Non-FAM Users, *n* (%)[a]**	***p*[b]**
Types of methods used			
Abstinence	108 (65.5)	99 (55.9)	.03
Barrier methods	57 (34.5)	82 (46.3)	.04

Hormonal contraceptives	41 (24.8)	94 (53.1)	.001
Intrauterine device	2 (1.2)	16 (9.0)	.003
Withdrawal or pull out	50 (30.3)	66 (37.3)	.21
Number of different methods of contraception used			
1	29 (17.6)	72 (40.7)	.001
2	62 (37.6)	49 (27.7)	.07
3	32 (19.4)	38 (21.5)	.73
4	34 (20.6)	17 (9.6)	.01
5	8 (4.8)	1 (.6)	.03

Note. FAM = fertility awareness method.

[a] Percentages for each method are not mutually exclusive.

[b] $p < .01$ after Bonferroni adjustment is considered significant.

Level of Self-Perceived Knowledge About Fertility

Participants' self-perceived fertility knowledge scores ranged from 8 to 32 (mean [*M*] = 20.86, standard deviation [*SD*] = 4.88) out of a possible score of 32 on the Knowledge of Fertility Scale. Among the participants, 20% perceived themselves as having *none* or *a little* knowledge about fertility. More than half of the participants believed they had *some* knowledge, and 29% believed they knew *a lot* about female fertility.

Score of Actual Knowledge About Fertility

Scores for actual knowledge ranged from 27 to 100 (*M* = 78.04, *SD* = 14.36) on the Mu Fertility Knowledge Assessment Scale, which indicated wide variation in the depth and accuracy of knowledge about fertility among the participants. Besides choosing wrong answers, many participants also chose *don't know* for specific fertility topics. For example, although 95.9% (*n* = 328) of participants knew the definition of ovulation, 79.5% (*n* = 272) believed that ovulation always occurs on the 14th day of each menstrual cycle, and 8.8% (*n* = 30) did not know when ovulation occurs during the menstrual cycle. Similarly, even though 92.1% (*n* = 315) of participants knew that the likelihood of conception varies with age, 62.8% (*n* = 215) of participants believed that a woman is most fertile in her 30s, and approximately 27% (*n* = 92) did not know when a woman is most fertile. Furthermore, 82.1% (*n* = 280) of participants thought that female fertility remains stable from puberty until menopause, and 85.1% (*n* = 291) believed that women remain fertile even after menopause. The participants were generally aware that negative lifestyle factors, such as being overweight, smoking, and using alcohol, affect female fertility and conception. However, 15% (*n* = 51) of them did not know that sexually transmitted infections may increase the risk of infertility.

Fertility Health Risks

Scores on the FertiSTAT for self-reported fertility health risk factors ranged from 0 to 12 (*M* = 1.74, *SD* = 1.87). The most frequently reported fertility risk factors were related to a woman's menstrual cycle. Almost half of the participants (42.2%) answered *yes* to *I suffer from severe period pains*, and 32.2% answered *yes* to *My menstrual cycle is unpredictable. My period often comes more than five days earlier or later than expected (when I am not using contraceptives).* More than 10% of participants indicated that they did not know the length or characteristics of their menstrual cycles. Among lifestyle factors that may affect a woman's fertility, overweight was the most frequently reported factor (19%), followed by stress (8%), alcohol (5%), and unprotected sex with multiple partners (4%).

We compared the mean number of fertility health risks by different categories based on demographic characteristics (see Table 3). Results indicated no significant differences in the number of fertility health risks between participants who had different levels of education ($p = .13$) or pregnancy histories ($p = .51$). The only significant finding was between participants who used FAMs and participants who used other methods of

contraception (p = .007): participants who used FAMs reported significantly fewer fertility health risks than those who used other methods.

Table 3. Comparisons of Fertility Health Risk Factors by Participant Characteristics (N = 342)

Participant Characteristic	Number of Fertility Health Risk Factors, *M (SD)*	*p*[a]
Education level		
High school or less	2.07 (1.16)	.13
Some college	1.91 (1.98)	
College degree or higher	1.52 (1.76)	
Contraception methods		.007
Fertility awareness	1.46 (1.38)	
Other method	2.00 (2.20)	
Pregnancy history		.51
Yes	1.84 (1.83)	

Note. M = mean; SD = standard deviation.

[a] By t test for differences in means (for participant characteristics with two categories) or analysis of variance (for characteristics with three categories).

Analysis

We used a regression model to examine the relationships among demographic characteristics, self-perceived and actual knowledge about fertility, and fertility health risks. The overall regression model was significant and explained 13% of the variance in fertility health risks (p < .001). Methods of contraception, self-perceived knowledge about fertility, and actual knowledge about fertility were significantly associated with fertility health risks. Participants who used FAMs or who had greater actual knowledge of fertility reported significantly fewer fertility health risk factors. Participants who had greater self-perceived knowledge about fertility had more fertility health risks. Age, education level, and pregnancy history were not significantly related to fertility health risks (see Table 4).

Table 4. Multivariate Linear Regression Model of the Relationships Among Participants' Demographic Characteristics, Knowledge About Fertility, and Fertility Health Risks (N = 340)

Participant Characteristic	β	*SE*	*p*
Intercept	1.22	1.68	—
Age	0.09	0.08	.26
Some college (ref = high school)	0.01	0.49	.92
College degree or higher (ref = high school)	–0.09	0.51	.53
Pregnancy history (ref = no pregnancy)	0.09	0.25	.15
Used FAM (ref = used other contraception method)	–0.17	0.26	.01
Self-perceived level of knowledge about fertility	0.23	0.02	<.001
Score of actual knowledge about fertility	–0.28	0.01	<.001

Note. FAM = fertility awareness method; ref = reference group; SE = standard error.

R^2 = .13, p < .001. The overall regression model was significant and explained 13% of the variance in participants' fertility health risks.

Discussion

Findings from our study were consistent with previous studies in which researchers found that young women had limited and inaccurate fertility knowledge (Chan et al., 2015, Hashiloni-Dolev et al., 2011, Lucas et al., 2015, Peterson et al., 2012, Rovei et al., 2010, Tydén et al., 2006, Virtala et al., 2011). We used a newly developed fertility knowledge assessment instrument, the Mu Fertility Knowledge Assessment Scale, to assess actual

knowledge about fertility. Responses to the 26 items indicated that participants had general knowledge about female fertility and conception but that they lacked accurate understanding about the important details of specific aspects of female fertility. For instance, most participants knew the definition of ovulation, but many had no true knowledge of when ovulation and the window of fertility occur in a menstrual cycle. Similarly, participants largely knew that age affects female fertility, but many overestimated the age range for optimal fertility and the longevity of female fertility. These findings indicate that it is necessary to assess young women's knowledge about specific topics instead of asking broad questions about fertility.

We explored young women's self-perceptions of their knowledge about fertility. Compared with studies in which researchers used one general question to assess this knowledge (Daniluk et al., 2012, Lucas et al., 2015, Virtala et al., 2011), we went into more detail. We found discrepancies between participants' self-perceptions and their actual knowledge about fertility, and the most misconceptions were related to ovulation and conception within the menstrual cycle and age-related fertility decline. For instance, although more than 70% of participants believed they knew *some* or *a lot* about the effect of age on female fertility, most of them answered these questions incorrectly. In part, this misconception may be attributed to media coverage of ART and successful stories of older women who become pregnant. Participants also believed they were more knowledgeable about ovulation and conception than they actually were. These findings highlight the importance of assessing young women's actual knowledge about specific fertility topics and correcting any misconceptions.

We examined relationships among participants' demographic characteristics, self-perceived and actual knowledge about fertility, and fertility health risks. Among the selected demographic characteristics, use of FAMs was the only factor significantly associated with participants' actual knowledge about fertility and their fertility health risks. This finding is not surprising, given that the successful use of FAMs requires a woman to pay attention to the characteristics of her menstrual cycle and can help her learn about her own fertility. Our regression modeling indicated that greater self-perceived knowledge was associated with more fertility health risks, whereas greater actual knowledge was associated with fewer fertility health risks. A possible explanation is that misconceptions about female fertility could lead young women to overlook certain fertility risks, whereas greater actual knowledge about fertility can help them engage in better self-care to minimize these risks. Lifestyle modifications can optimize fertility health and fertility-related outcomes now and in the future. However, the intention to change behavior is contingent on accurate and adequate knowledge of fertility (Fulford, Bunting, Tsibulsky, & Boivin, 2013).

Compared with previous studies with samples of older women (Daniluk et al., 2012, EMD Serono, Inc., 2011, Lundsberg et al., 2014), we focused on participants between the ages of 18 and 24 years. Many young women place great importance on their fertility, and in our study, 87.3% of participants considered fertility *very important* or *extremely important.* In fact, after completing the online questionnaire, 35% of participants e-mailed us and requested the correct answers to the Mu Fertility Knowledge Assessment Scale items and resources about fertility health. Anecdotally, many participants shared that taking this survey motivated them to learn more about fertility and their own fertility health. This interest has also been reported by several other researchers who studied older women (Daniluk et al., 2012, García et al., 2015). It seems that exposure to the topic can stimulate women's interest to learn more about fertility.

> *Young women are interested in learning about their fertility and improving their knowledge of fertility, and they often prefer to discuss these issues with their health care providers.*

Most participants (82.9%) in our study indicated that they would like to obtain information about fertility from their health care providers. One of the goals of preconception care is to improve women's knowledge, attitudes, and behaviors related to preconception health in an effort to achieve optimal birth outcomes (Johnson et al., 2006). The American College of Obstetricians and Gynecologists (2018) recommended that health care providers counsel each woman about her lifestyle at every encounter to promote optimal preconception health. To optimize limited appointment times, our findings indicate that clinicians may need an effective assessment tool

to guide individualized consultation and education about fertility. In a qualitative study, midwives expressed the importance of teaching women about fertility to prevent unwanted pregnancy and optimize preconception health; however, they struggled with how to prioritize appropriate topics (Stern et al., 2015). The application of a simple and reliable scale to assess knowledge about fertility could allow clinicians to focus on the specific topics that are less clearly understood.

Limitations

Our study has several limitations. First, most participants were White with some college education. Therefore, our findings are not generalizable to women with diverse ethnic and racial backgrounds or those with less education. Despite the large percentage of Catholic women among the participants, we do not consider this is a significant limitation, because evidence suggests that there is no difference in contraception use between Catholic and non-Catholic women. According to the Guttmacher Institute's analysis of the National Survey of Family Growth data, 98% of Catholic women have used a method of contraception other than natural family planning, which is not different from the contraceptive use reported by non-Catholic women (Jones & Dreweke, 2011). However, for exploring the relationship of contraception methods and young women's knowledge about fertility and fertility health risks, we evaluated participants based on whether they had used FAMs or not. This finding may not be applicable to the general population, because many women do not use FAM as a contraception method. Future studies need to include more diverse samples of women to evaluate knowledge of fertility and its effect on fertility health risks.

In addition, FertiSTAT is an assessment tool used to identify women's fertility health risks based on their individual reproductive histories and lifestyles. The accuracy of the report is specific to a woman's self-knowledge and insight. Nevertheless, FertiSTAT has shown content and criterion validity; it is a simple tool that can easily be incorporated into a survey or used as a screening tool in practice. Research related to fertility health, especially for young women, is still quite early in its development. It is important to continue to develop and evaluate instruments that are used to measure key concepts related to education, research, and care to optimize fertility health.

Implications

Findings from our study and previous research suggest that knowledge about fertility is an important factor that can affect young women's reproductive planning, behaviors, and outcomes (Abiodun et al., 2018, Daniluk and Koert, 2015, Stern et al., 2013, Wojcieszek and Thompson, 2013). Young women are interested in learning more about their fertility and often prefer to discuss this issue with their health care providers (EMD Serono, Inc., 2011, Lundsberg et al., 2014, Stern et al., 2013). It is critical that future researchers evaluate different ways to assess knowledge and provide education in clinical settings. Notably, past research findings indicated that one-time intervention does not produce sustainable, long-term results (Daniluk and Koert, 2015, Wojcieszek and Thompson, 2013). To address this, longitudinal studies are needed to evaluate the effects of ongoing education about fertility on women's fertility health risks, sexual and reproductive behaviors, and pregnancy outcomes.

Conclusion

A young woman's knowledge of fertility is important for self-care, reproductive health, and life planning. Health care providers should assess knowledge about fertility and teach young women about their fertility and risk factors because of the significant relationships among these factors. It is essential to address young women's misconceptions and their actual knowledge about fertility to help them achieve optimal fertility health.

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