IMPACT OF AN ONLINE EDUCATION INTERVENTION ON HEALTHCARE PROVIDERS’ SELF-EFFICACY FOR ASSESSMENT AND CARE OF CLIENTS EXPERIENCING FEMALE SEXUAL DYSFUNCTION

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By

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ABSTRACT

In the United States, nearly half of all women will report having at least one type of female sexual dysfunction at any given point in their lives. Female Sexual Dysfunction (FSD) is defined as a disturbance in sexual desire, psychophysiological changes that characterize the sexual response cycle, and marked sexual distress and interpersonal difficulty. Most women feel their healthcare provider should discuss their sexual concerns, yet few report being asked or screened about their sexual health. Women may seek care to address their sexual health concerns because sexual concerns can affect their quality of life. This cross-sectional study used pre and post-test to evaluate the effectiveness of an online education module that aims to improving the self-efficacy of physicians, physician assistants, nurse practitioners, and certified nurse-midwives who provide gynecological care. Forty-three participants completed responses to the entire questionnaire, including pre and post-test. The majority of participants identified as female (91%), Caucasian (51%), nurse practitioners (81%) providing gynecological care for 6-15 years (53%) and live in the south (58%). Following the intervention, participants demonstrated a significant increase in confidence in their ability to communicate with older adults ($p < 0.001, d = 0.51$) and with those who have differing sexuality from their own ($p < 0.00$, $d = 0.53$). There was an increase in confidence in the knowledge to care for patients with religious/spiritual convictions about sexuality ($p < 0.006, d = 0.40$) and sexual problems related to a medical, pharmacological, or surgical treatment ($p < 0.009, d = 0.38$). Participants reported fewer learning needs following the educational module with a moderate to large effect size across different competencies. Educating healthcare providers using an online educational module may lead to more confidence in the healthcare providers’ communication with, knowledge of, and attitudes related to female sexual concerns.
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Sincerely,
Juandria N. Montgomery
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Chapter I

Introduction

Epidemiologic data have estimated that 41% of women will experience at least one sexual complaint at any given time in their lives (McCool et al., 2016). Healthcare providers are tasked with assessing and caring for those of all gender and sexuality classifications presenting with sexual health concerns: acknowledging the diversity of gender and sexual identities, this paper will focus on the sexual function of cisgender women referred to throughout as women. For the purpose of this paper, cisgender women are those whose gender identity and sex at birth are female. Female Sexual Dysfunction (FSD) is defined as a disturbance in sexual desire and in the psychophysiological changes that characterize the sexual response cycle and cause marked distress and interpersonal difficulty (Sexual Dysfunctions, 2013). The sexual dysfunction must not be explained by nonsexual mental disorders, a consequence of severe relationship distress or other significant stressors and is not an effect of substances/medication or other medical conditions (Sexual Dysfunction, 2013). If the woman experiencing sexual concerns does not have one of the previous causes, the following diagnoses may be given based on their presenting symptoms: female sexual interest/arousal disorder, female orgasmic disorder, genito-pelvic pain/penetration disorder, and substance/medication-induced sexual dysfunction (Sexual Dysfunctions, 2013). Healthcare providers still hesitate to discuss patients’ sexual history, which may lead to missed opportunities to assess their patients for sexual health concerns (Sobecki et al., 2012). Most healthcare providers lack sexual health education and training to evaluate and treat the root cause of sexual concerns, which may contribute to their hesitancy to discuss sexual health (Ross et al., 2018).
Healthcare providers who provide gynecological healthcare may obtain additional training on female sexual health to further expand their ability to care for sexual health concerns. There have been sexual health training programs such as Coleman & Mazin (2016) for healthcare providers to assist them in sexual health interviewing, diagnostic decision-making, and management skills (Ross, et al., 2018). The development of the Sexual Health Education Professionals Scale (SHEPS) assessed how sexual health confidence, knowledge and skills were changed following a sexual health workshop (Ross et al., 2018). The SHEPS tool could assist with evaluating healthcare providers’ ability to care for the sexual concerns of patients. The Learning Needs for Addressing Patients’ Sexual Health Concerns is a 24-item instrument developed to assess the learning needs of healthcare providers in relation to sexual health care (Tsai et al., 2012). Healthcare providers could increase their ability to care for the sexual concerns of women by engaging in continuing education on this topic. The purpose of the study is to assess the effectiveness of an online educational intervention about female sexual dysfunction that aims to improve the self-efficacy of healthcare providers for the assessment and care of cisgender women.

**Background**

Female Sexual Dysfunction contains complex physiologic and psychological components requiring detailed screening, history, and physical examination (Dawson et al., 2017). In May 2013, The Sexual Function Health Council of the American Foundation for Urologic Disease officially created a classification system to clearly define FSD which was then adopted in the Diagnostic and Statistical Manual of Mental Disorders V (Dawson et al., 2017). FSD includes four areas: female sexual interest/arousal disorder, female orgasmic disorder, gentiopelvic pain/penetration disorder, and substance/medication-induced sexual dysfunction (Sexual
Dysfunctions, 2013). The classification of female sexual dysfunction seeks to improve healthcare providers’ ability to screen, diagnose and treat patients in a clinical setting.

The purpose of identifying female sexual dysfunction with women expressing a sexual complaint is to assess, diagnose and treat based on the comprehensive assessment. To properly diagnose and define the type of FSD experienced by the patient, there must be a detailed screening, thorough obstetric and gynecological history, and physical examination by the provider (Dawson et al., 2017). There are multiple screening tools available for use to screen for FSD. The most common screening tools for FSD include the Female Sexual Function Index (FSFI), a 19 item self-report questionnaire, measuring all dimensions of FSD, Brief Sexual Symptom Checklist for Women (BSSC-W), a 5-item self-report questionnaire, used as a pre-consultation tool and the Decreased Sexual Desire Screener (DSDS) a 5-item questionnaire for diagnosing generalized acquired HSDD (Derogatis et al., 2020). Women must present with FSD symptoms “more than 75% of the time, for more than six months, causing significant distress and must not be explained by a nonsexual mental disorder, relationship distress, substance abuse, or medical condition” (Dawson et al., 2017). If a woman is experiencing female sexual dysfunction related to a general medical condition and sexual aversion, it is not a listed condition in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (Dawson et al., 2017).

Prevalence

According to the 2016 systematic review and meta-analysis by McCool et al., of the premenopausal women asked, 41% of them reported having experienced at least one symptom of FSD at some point in their lives. Other studies emphasized a general focus on post-menopausal women, hence why McCool et al. conclude that further study with younger women is needed.
McCool et al. further note a need to study populations of conservative women, bisexual and homosexual women, and adolescents.

Female sexual dysfunction can impact the patients’ quality of life in various ways. Patients can experience emotional distress as well as difficulty engaging in intimate relationships (Nappi et al., 2016). The most frequent areas effecting the quality of life related to sexual functions in women relate to age, mental health, achievement of reproductive goals, education, body image, self-esteem norms, and experiences also contribute to sexual satisfaction among women (Nappi et al., 2016). FSD can have long lasting sexual health effects on women who experience overlapping disorders, especially in women during midlife (Nappi et al., 2016). As healthcare providers assess women at different stages in life, the need for detailed sexual health and social history is necessary to give the correct diagnosis. Healthcare providers must be aware of the recommended care that should be offered to the patient following the diagnosis of FSD. It is important for healthcare providers to obtain continuing education related to sexual health to ensure high quality health care and improved quality of life for women experiencing FSD.

**Interventions to Address FSD**

Many studies have examined psychological interventions to assist women with FSD. These interventions have been categorized as cognitive therapy, educational intervention, and others (Dawson et al., 2017). There are studies focused on the effect of the stated therapies on patients with FSD. Cognitive therapy has been noted to be the most effective in treating the symptoms of FSD (Dawson et al., 2017). It is promising to see that the interventions discussed assisted the patients in improving their sexual function. More study is needed to examine the long-term effects of the interventions.
Knowledge, Attitudes, and Behaviors of Healthcare Providers

Assessing healthcare providers’ knowledge, attitudes, and behaviors is essential to understand their educational needs and ensure women with FSD receive appropriate screening, assessment, and care. The behaviors of medical students, primary care providers, and nurses alike have been studied in past years (Alimena et al., 2016, Reynolds & Magan, 2015, Vik & Brekke, 2017). There were reports of discomfort with some providers discussing sex with women, yet others stated how consistent relationships with the providers provided the ability to obtain health histories from women (Alimena et al., 2016, Kingsberg et al., 2019). Most providers ask their patients about their sexual activities but do not routinely use a valid screening tool for FSD (Reynolds & Magan, 2015, Sobecki et al., 2012, Vik & Brekke, 2017). The ability to inquire about the basic sexual history of women varied between healthcare providers (Alimena et al., 2016, Sobecki et al., 2012, Vik & Brekke, 2017).

The healthcare providers’ knowledge and self-efficacy of FSD remain understudied in the literature. The lack of adequate training and experience in assessing, diagnosing, and treating sexual dysfunction among women is identified as one of the top reasons providers are not addressing the overall sexual health of the patients they care for (Blair et al., 2013, Vik & Brekke, 2017). The general practitioners expressed the need for continuous education to enable them to adequately treat the patient’s sexual needs (Blair et al., 2013, Vik & Brekke, 2017). Although the studies identified lack of education as a barrier, neither correlated how education could affect the self-efficacy of the healthcare providers.

For healthcare providers to provide the best treatment for their patients experiencing FSD, there must be knowledge of the type of dysfunction the patient is experiencing and available treatments. Healthcare providers must understand their personal feelings related to
assessing for FSD and how to incorporate screening into their practice. The utilization of both knowledge of and screening tools for FSD will assist in providers having the ability to screen, treat, and diagnose patients.

**Theoretical Framework**

Bandura’s Theory of Self-Efficacy is based on the principal assumption that psychological procedures serve as a means of creating and strengthening expectations of personal efficacy, which predict an outcome (Bandura, 1977). An individual must believe that a particular action will produce a positive outcome. Their behavior is not influenced if they have serious doubts about whether they can perform the necessary activities. When one combines an adequate skill set with high self-efficacy, the person will set forth with a stronger effort to become successful.

Figure 1

*Efficacy Expectations* (Bandura, 1977)

![Image of Efficacy Expectations](image)

In this study, Bandura’s Theory of Self-Efficacy is used to inform the intervention that aims to increase the knowledge of FSD among healthcare providers. The theory is useful to inform interventions that seek to change healthcare provider behavior by increasing their knowledge and skills. Healthcare providers with increased self-efficacy believe they can obtain the knowledge and skills related to FSD and will be more likely to screen, diagnose, and treat FSD among their patient population. As healthcare providers’ knowledge and skills necessary for
caring for patients with FSD improve, they will have increased self-efficacy after the educational module. The perceived ability of the healthcare provider to care for those women increases when combined with the knowledge of skills needed to screen, diagnose, and treat women. Of the four sources of efficacy expectations, performance accomplishments align with the study based on the healthcare providers’ personal mastery of FSD upon completing the educational module. Self-efficacy is a proxy for behavior change; thus, we anticipate that healthcare providers will take their new skills and knowledge and use them in daily practice. As the healthcare providers continue to use their new knowledge, they will display mastery in caring for women with FSD. This study examined healthcare providers’ baseline knowledge, training needs, and self-efficacy compared with post-intervention scores following the educational module.

Definition of Terms

Healthcare Providers

Healthcare providers for this study include physicians, nurse practitioners, certified nurse midwives, and physician assistants who provide gynecological care to cisgender women.

Treatment

The care given to the patient following a diagnosis of FSD may include prescribing or stopping medication, referral to psychiatry, sexual health counseling, pelvic floor therapy, use of dilators, and/or use of lubricants or pain creams.

Female Sexual Dysfunction

Female sexual disorders are defined as the three female dysfunctions classified by The Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5) as female sexual
interest/arousal disorder, genito-pelvic pain/penetration disorder, and female orgasmic disorder (Rosen et al., 2000).

**Female Sexual Interest/Arousal Disorder**

The absence or reduced frequency or intensity of three of the six indicators: 1) Absent/reduced interest in sexual activity, 2) Absent/reduced sexual/erotic thoughts or fantasies, 3) No/reduced initiation of sexual activity and typically unreceptive to a partner’s attempts to initiate, 4) Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all sexual encounters, 5) Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues, 6) Absent/reduced genital or nongenital sensations during sexual activity in almost all or all sexual encounters (Rosen et al., 2000).

**Female Orgasmic Disorder**

Female Orgasmic Disorder is defined as difficulty experiencing orgasm or marked reduced intensity of orgasmic sensations. It must be experienced on almost all occasions of sexual activity and have a minimum duration of approximately six months (Rosen et al., 2000).

**Genio-Pelvic Pain/Penetration Disorder (GPPPD)**

GPPPD refers to four common comorbid symptoms 1) difficulty having intercourse, 2) genito-pelvic pain, 3) fear of pain or vaginal penetration, and 4) tension of the pelvic floor muscles (Rosen et al., 2000).
Substance/Medication-induced Sexual Dysfunction

Substance/medication-induced sexual dysfunction is defined as a clinically significant disturbance in sexual function, which is predominant in the clinical picture (Rosen et al., 2000). Medications and substances include

**PICOT Question**

The PICOT question for this project is: Among healthcare providers who provide gynecological care to cisgender women, do those who attend an online education intervention about FSD have higher knowledge and self-efficacy following the intervention to the care for patients who have FSD compared to prior attending the intervention? The population to be examined are healthcare providers. The intervention was the implementation of a pre-recorded online education module related to female sexual dysfunction. The comparison will be of knowledge and self-efficacy before and after the educational intervention. The outcome is to determine the effectiveness of the online educational module on the healthcare providers' self-efficacy related to female sexual dysfunction.

**Search Strategy**

The words relevant to the PICOT question were used to search OVID Med and CINAHL databases. The combination included, female sexual dysfunction “OR” sexual health, AND health personnel, AND outcomes of education “OR” continuing education. For this project, OVID and CINAHL were filtered to English from 2001 through 2021t. The combined search of the above phrases resulted in 5 results from CINHAL, of which one article was retained. OVID Med resulted in 8 articles, none of which were retained.
Literature Review

Healthcare Provider Education on Female Sexual Complaints

There was a single article retained by Blair et al. that included all the search criteria. The quantitative study examined the efficacy of an educational intervention on assessing and treating female sexual complaints. Healthcare professionals participated in a 4-hour workshop on the assessment, diagnosis, and treatment of FSD. Participants were licensed medical and mental healthcare professionals and students in the greater San Francisco Bay Area who currently see women suffering from FSD (Blair et al., 2013). The workshop was delivered in two parts, didactic and live demonstration. The participants were able to practice the knowledge gained from the lectures with one another while the workshop facilitators observed. Anonymous questionnaires were obtained in pre and post-tests (Blair et al., 2013).

Blair et al. (2013) report healthcare providers have increased knowledge 1) prevalence of female sexual complaints and the impact on quality of life, 2) diagnosis, classification, and evidence-based treatment, 3) comfort in discussing sexual health with women following the education workshop. Limitations of this study include sample size, demographic homogeneity, intention to assess sexual health and biases in self-selected participation, and the use of a self-reported tool to measure the outcome of intervention (Blair et al., 2013).

Rationale

Very few studies have investigated the effectiveness of an online educational module on the self-efficacy of healthcare providers caring for cisgender women with female sexual dysfunction, a potentially cost-effective, efficacious, and accessible method for improving care. The lack of routine screening for female sexual dysfunction leads to women suffering from
decreased quality of life, particularly related to a disruption in intimate relationships. This may be related to the hesitancy of the healthcare provider to address sexual health and the provider not creating a trusting environment for women to disclose concerns during an office visit. The healthcare provider may also lack the knowledge and confidence to assess, screen, and treat sexual complaints.

**Specific Aims**

The specific aim of this project is to evaluate the effectiveness of an online educational intervention about female sexual dysfunction on the knowledge and self-efficacy of healthcare providers.

**Conclusion**

This chapter discussed the background and prevalence of FSD and healthcare provider knowledge, attitudes, and behaviors for the care of women with FSD. As providers look forward to caring for the women in their practice, they must also address their apprehension in performing screenings of sexual health concerns. The lack of confidence in discussing and screening for FSD by the healthcare provider may prevent them from successfully treating the patient. Providers must be appropriately educated on the use of sexual health screening tools, physical assessments, and treatment options for female sexual dysfunction. Expanding healthcare providers' educational knowledge on FSD may assist in creating sustainable screening practices for female sexual dysfunction.
Chapter II

Methods

The following chapter will discuss the implementation of the doctoral project. This project seeks to evaluate healthcare providers’ level of self-efficacy to care for patients’ FSD after an online educational intervention.

Design

The project is a single-arm effectiveness study that used a pre-test/post-test design. Participants were recruited via convenience and snowball sampling. The participants provided demographic and pre-test data before viewing the educational intervention and completed the post-test immediately following.

Human Subject Review

This study was reviewed by the Institutional Review Board at Georgetown University. An expedited review was granted since the risk to participants was at a level of minimal risk and the study was granted IRB approval. Participants' responses were anonymous, and no personally identifiable data was collected.

Population

The population evaluated in this project are healthcare providers over the age of 18 who provide gynecological care to clients who were assigned female at birth. The healthcare providers included physicians (both MD & DO), Nurse Practitioners, Certified Nurse-Midwives, and Physician Assistants. Eligible healthcare providers live in the United States, have experience caring for the gynecological needs of cisgender women, and agreed to participate in the project.
Procedures and Timeline

We sent invitations to participate to healthcare providers organizations (Chattanooga Area Nurses in Advanced Practice, Atlanta Chapter, United Advanced Nurse Practice Registered Nurses, UT Chattanooga School of Nursing, Northeast TN Nurse Practitioner Association, Hamilton County Medical Society), social media groups and professional pages (Delta Sigma Theta Dissertation Group, DNPs of Color, Doctor of Nursing Practice Support Group, Black Nurses Rock, National Black Nurses Network, Queens Empowerment Academy, Nurse Practitioner Group, Family Nurse Practitioner Networking Group), and clinical practices of healthcare providers that provide gynecological care (Women’s Surgery Center, Innovations Women’s Health Specialists, Erlanger Center for Women, North Charlotte OB/GYN, Women’s and Infant Services). We also used a snowball component, giving participants the opportunity to share the study with others by attaching a flyer emailed to target groups and individuals. The survey was hosted on Georgetown Qualtrics. The link and flyer were also sent to individual healthcare providers by PI and other participants from November 23, 2021, through February 23, 2022.

Participants were sent an email invitation with the link to join the survey. The survey was hosted on Qualtrics online survey platform. Participants completed consent before entering the study. Participants would then complete the demographics and pre-test survey(P1). The participants would then view the online educational intervention module. After viewing the module, the participants would complete the post-test survey(P2). The participants were able to start and stop the online educational intervention at their convenience. Once completing all components of P2 of the study, their participation in the online educational intervention was
concluded. The participants’ information received from P1 and P2 were linked for data comparison of the pre-test and post-test. All the data obtained in P2 was anonymous.

**Educational Intervention**

The educational intervention was a pre-recorded set of four videos created in Canva using the talking presentation template. Each video represented one of the objectives of the module (1) Define Female Sexual Dysfunction, (2) Assessment by Healthcare Provider, (3) Attitudes and Biases of Healthcare Providers, and (4) PLISSIT Model. At the end of each video, a reflection time question was asked as a way for participants to think about their current practice in relation to the information presented in the video. Healthcare providers were educated about the definition of female sexual dysfunction (FSD), description of the types of FSD, assessment, screening tools available, attitudes/bias awareness, and PLISSIT Model training. The PLISSIT Model assists healthcare providers in discussing sexual health with patients by introducing sex in the clinical conversation, narrowing the scope of the patient’s concern, and offering effective counseling and treatment (Palmisano, B., 2018).

**Measures**

The demographic questionnaire included age, gender, years in practice, type of healthcare provider, region of the country currently practicing in, ethnic/racial background, any formal education on sexuality, and whether healthcare providers are currently treating FSD. Two data collection tools were used in the project. Portions of the Sexual Health Education Professional Scale (SHEPS) and Learning Needs for Addressing Patients’ Sexual Health Concerns (LNAPSHC) were used for the pre-test and post-test.
Sexual Health Education Professional Scale (SHEPS)

Sexual Health Education Professional Scale (SHEPS) is a lengthy 102-item questionnaire for medical students, divided into three sections, followed by a demographic section. The scale was developed to assess change in sexual health confidence, knowledge and attitudes following an intervention. Section one asked about healthcare providers’ confidence in communicating, assessing, and discussing sexuality and sexually related topics with patient populations. (Ross et al., 2018). Section two asked about the health care providers’ confidence in their knowledge to care for patients when discussing sexuality and sexually related topics with the same questions as section one (Ross et al., 2018). Sections one and two utilized a Likert scale with nine responses: very confident, moderate confident, slightly confident, neither, slightly unconfident, moderate unconfident, very unconfident, don’t know, and prefer not to answer. Section three asked questions related to the attitudes of health care providers in their level of agreement or disagreement with statements (Ross et al., 2018). Section three utilized a Likert-type scale, with nine responses ranking the participants’ agreement or disagreement: strongly agree, moderately agree, somewhat agree, neither, somewhat disagree, moderate disagree, strongly disagree, don’t know, and prefer not to answer. The fourth section was demographics questions of the participants about the type of health care provider, years of service, region of provider practice, ethnic and racial backgrounds, age, and gender of the participants.

For this project, only thirty-three questions from sections one, two, and three related to the gynecological needs of women were used from the questionnaire. The selected questions relate to the following areas: age of women, sexual problems or concerns, medical, pharmacological or surgical treatments, religious/sociocultural beliefs, gender of healthcare providers versus women treated, and experience in treating sexual problems. These questions
will give a better picture of healthcare providers' feelings about discussing sexual health with women. The developers understood that all the questions within the tool might not apply to all participants. In the study by Ross et al. (2018), only approximately half of the questions were used from the complete survey. The questions were scaled individually for frequency of answers and level of confidence, knowledge and skills. Another study assessed the reliability of the SHEPS tool and noted the high internal reliability of each question (Zamboni and Ross, 2019). If the scores in sections one and two were high, they would reflect a lower level of confidence in knowledge and skills (Zamboni and Ross, 2019). However, section three assessed the answers by agreement or disagreement, with a lower score indicating a greater agreement with the statements asked. Zamboni and Ross (2019) used a conservative versus liberal approach to the questions, with higher scores indicating more liberal views.

**Learning Needs for Addressing Patients’ Sexual Health Concerns (LNAPSHC)**

Learning Needs for Addressing Patients’ Sexual Health Concerns (LNAPSHC) is a 24-item questionnaire to assess nursing students’ sexual health education needs. (Tsai et al., 2013). This instrument included three distinct sections entitled 1) sexuality in health and illness, 2) communication about patients’ intimate relationships and 3) approaches to sexual health care by health care providers (Tsai et al., 2013). This instrument used a four-response Likert scale to rank and score the responses as: No need = 0, mild need = 1, moderate need =2, and strong need. The scores are then combined, and the higher scores indicate the stronger learning needs of students. A panel of six experts conducted the validation of the tool, then tested it on two sets of nursing students for internal consistency (Tsai et al., 2013). For this project, only Section three (9-items) were used since it examines how healthcare providers feel about their education related
to sexual health care of women. The questions selected addressed the educational needs of healthcare providers before and after the educational module.

**Data Analysis Plan**

The Statistical Package for the Social Sciences (SPSS) software was used to examine the mean, frequency, and effect size of the responses reported by participants. We performed descriptive statistics for all variables using means (SD) for continuous variables and frequencies and percentages for categorical variables. A paired one-tailed t-test was used to determine if there was statistical significance in the individual response scores before and after the educational module. We completed a power analysis using G*Power 3.1.9.7, and a minimum sample size of 71 was necessary to achieve a power of .80 using a paired sample $t$ test with an alpha of .05 and a small effect size ($d = 0.3$). Cohen’s $d$ was used to determine the effect size of the intervention. Pre and post-test responses were matched. Georgetown Box was used to store and collect the information and was only used by the principal investigator, mentor, and statistician. SPSS was used to analyze data, comparing the pre and post-tests. Data was stored using Box.

**Conclusion**

Healthcare providers have different learning needs related to sexual health. Utilizing online educational modules is one way to assisting in addressing knowledge and skill deficiencies. This study can determine the effectiveness of online educational interventions on FSD. The results of this study can be useful in the creation of educational interventions addressing FSD.
Chapter III

Results

This chapter will discuss the results of the study. Data was collected in a pre-test/post-test survey following an online educational intervention on FSD. Descriptive statistics was used to analyze the data to determine effectiveness of the intervention on healthcare providers knowledge, skills and learning needs.

Findings

Sample

A total of one hundred and seventy-three participants accessed the survey link. There were ninety-three responses excluded, of which sixty-eight were blank, twelve completed demographics only, and thirteen did not complete the pre-test. Eighty participants completed the demographics and pre-test of the survey only. Thirty-seven participants were excluded from the analysis because they did not complete the post-test. Forty-three responses completed the survey's demographics and pre and post-tests and were included in all analyses.
Most (91%) of the participants identified as female. Sixty-five percent of the participants were between thirty and forty-nine years of age. Over half of the participants identified as Caucasian (51%) and from the south (58%). The discipline of healthcare providers that actively participated were nurse practitioners (81%), followed by certified nurse-midwives (11%), and lastly, physicians (8%). None of the respondents were physician assistants. Most participants have cared for the gynecological needs of cisgender women for 6-15 years (53%). Approximately half (51%) of the participants have obtained formal education on sexuality, and (51%) are currently treating FSD. Survey demographic data are listed in Figures 2-8.
Figure 3

*Gender Identified by Participants*

![Bar chart showing gender distribution of healthcare providers.](image)

Figure 4

*Age of Participants*

![Pie chart showing age distribution of participants.](image)

Figure 5

*Race/Ethnicity Identified by Participants*

![Pie chart showing race/ethnicity distribution of participants.](image)
Figure 6

Location of Clinical Practice

Figure 7

Type of Healthcare Provider Identified by Participants

Figure 8

Time Healthcare Providers Have Spent Caring for Gynecological Needs of Cisgender Women
The SHEPS questionnaire Section One assessed healthcare providers’ confidence in their ability to communicate, assess, and discuss sexuality and sexually related topics with patients. Within this section, the two questions that showed statistical significance and had a moderate effect size following the intervention were:

1. An older adult (>65) changes in sexuality with age ($p < 0.001$, $d = 0.51$)

2. A person whose values pertaining to one or several aspects of sexuality are in conflict with your own ($p < 0.00$, $d = 0.53$).

See Table 1 for complete results, with those items that were statistically significant noted in italics and those with moderate effect size (0.50-0.79) noted with an asterisk.
Table 1

<table>
<thead>
<tr>
<th>Pre- and Post-Test Confidence in Sexual Topic Communication</th>
<th>Pre M (SD)</th>
<th>Post M (SD)</th>
<th>t(42)</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>How confident are you in your ability to communicate/assess/discuss sexuality and sexually related topics with . . .</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A young adult (18-40) promoting sexual wellness</td>
<td>1.98 (1.08)</td>
<td>1.84 (0.97)</td>
<td>1.78</td>
<td>.042</td>
<td>0.27</td>
</tr>
<tr>
<td>A middle-age adult (41-65) promoting sexual wellness</td>
<td>2.14 (1.42)</td>
<td>1.81 (0.88)</td>
<td>1.97</td>
<td>.028</td>
<td>0.30</td>
</tr>
<tr>
<td>An older adult (&gt;65) changes in sexuality with age</td>
<td>2.40 (1.33)</td>
<td>1.98 (0.99)</td>
<td>3.33</td>
<td>&lt; .001</td>
<td>0.51*</td>
</tr>
<tr>
<td>A person with sexual problems/dysfunctions or concerns</td>
<td>2.70 (1.52)</td>
<td>2.21 (1.28)</td>
<td>2.47</td>
<td>.009</td>
<td>0.38</td>
</tr>
<tr>
<td>A person with sexual problems related to a medical, pharmacological or surgical treatment</td>
<td>2.84 (1.65)</td>
<td>2.26 (1.24)</td>
<td>2.99</td>
<td>.002</td>
<td>0.46</td>
</tr>
<tr>
<td>A person whose gender and/or sex is different from your own</td>
<td>3.02 (1.75)</td>
<td>2.51 (1.33)</td>
<td>2.89</td>
<td>.003</td>
<td>0.44</td>
</tr>
<tr>
<td>A person whose gender is the same as your own</td>
<td>1.93 (1.01)</td>
<td>1.91 (0.92)</td>
<td>0.33</td>
<td>.372</td>
<td>0.05</td>
</tr>
<tr>
<td>A person with conservative sociocultural beliefs about sexuality</td>
<td>2.30 (1.25)</td>
<td>2.00 (0.95)</td>
<td>2.68</td>
<td>.005</td>
<td>0.41</td>
</tr>
<tr>
<td>A person with liberal sociocultural beliefs about sexuality</td>
<td>2.07 (1.18)</td>
<td>1.88 (0.88)</td>
<td>1.54</td>
<td>.066</td>
<td>0.23</td>
</tr>
<tr>
<td>A person with religious/spiritual convictions about sexuality</td>
<td>2.47 (1.28)</td>
<td>2.12 (0.98)</td>
<td>2.35</td>
<td>.012</td>
<td>0.36</td>
</tr>
<tr>
<td>A person whose values pertaining to one or several aspects of sexuality are in conflict with your own</td>
<td>2.58 (1.38)</td>
<td>2.05 (1.05)</td>
<td>3.48</td>
<td>&lt; .001</td>
<td>0.53*</td>
</tr>
<tr>
<td>A person who requires referral for more specialized sexual healthcare</td>
<td>2.21 (1.37)</td>
<td>1.81 (0.73)</td>
<td>2.42</td>
<td>.010</td>
<td>0.37</td>
</tr>
</tbody>
</table>

Note: Lower scores indicate greater confidence. Significance level based on one-sided test. Statistically significant results are noted in italics. Results with moderate effect size (0.50-0.79) noted with an asterisk.

The next set of questions was related to confidence in healthcare providers' knowledge following the educational intervention. Healthcare providers showed the greatest improvement in mean scores with a small effect size (0.20-0.49) in the following questions:

(1) A person with religious/spiritual convictions about sexuality (p < 0.006, d 0.40)
(2) A person with sexual problems related to a medical, pharmacological or surgical treatment ($p < 0.009, d 0.38$).

Table 2

<table>
<thead>
<tr>
<th>Do you feel confident that you have the knowledge to care for patients when discussing sexuality and sexuality related topics in . . .</th>
<th>Pre (M (SD))</th>
<th>Post (M (SD))</th>
<th>$t(42)$</th>
<th>$p$</th>
<th>$d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A young adult (18-40) promoting sexual wellness</td>
<td>1.81 (0.93)</td>
<td>1.95 (1.07)</td>
<td>-1.29</td>
<td>.102</td>
<td>-0.20</td>
</tr>
<tr>
<td>A middle-age adult (41-65) promoting sexual wellness</td>
<td>1.86 (1.04)</td>
<td>1.95 (1.11)</td>
<td>-0.85</td>
<td>.200</td>
<td>-0.13</td>
</tr>
<tr>
<td>An older adult (&gt;65) changes in sexuality with age</td>
<td>2.14 (1.10)</td>
<td>2.12 (1.16)</td>
<td>0.19</td>
<td>.425</td>
<td>0.03</td>
</tr>
<tr>
<td>A person with sexual problems/dysfunctions or concerns</td>
<td>2.33 (1.36)</td>
<td>2.16 (1.15)</td>
<td>1.23</td>
<td>.114</td>
<td>0.19</td>
</tr>
<tr>
<td><em>A person with sexual problems related to a medical, pharmacological or surgical treatment</em></td>
<td>2.44 (1.26)</td>
<td>2.14 (1.08)</td>
<td>2.47</td>
<td>.009</td>
<td>0.38*</td>
</tr>
<tr>
<td>A person whose gender and/or sex is different from your own</td>
<td>2.74 (1.63)</td>
<td>2.42 (1.30)</td>
<td>2.39</td>
<td>.011</td>
<td>0.37</td>
</tr>
<tr>
<td>A person whose gender is the same as your own</td>
<td>2.07 (1.20)</td>
<td>1.98 (1.10)</td>
<td>0.75</td>
<td>.228</td>
<td>0.12</td>
</tr>
<tr>
<td>A person with conservative sociocultural beliefs about sexuality</td>
<td>2.29 (1.18)</td>
<td>2.07 (1.00)</td>
<td>1.71</td>
<td>.048</td>
<td>0.26</td>
</tr>
<tr>
<td>A person with liberal sociocultural beliefs about sexuality</td>
<td>2.09 (1.11)</td>
<td>2.02 (1.08)</td>
<td>0.60</td>
<td>.277</td>
<td>0.09</td>
</tr>
<tr>
<td><em>A person with religious/spiritual convictions about sexuality</em></td>
<td>2.49 (1.40)</td>
<td>2.14 (1.13)</td>
<td>2.63</td>
<td>.006</td>
<td>0.40*</td>
</tr>
<tr>
<td>A person whose values pertaining to one or several aspects of sexuality are in conflict with your own</td>
<td>2.53 (1.58)</td>
<td>2.09 (1.15)</td>
<td>2.24</td>
<td>.015</td>
<td>0.34</td>
</tr>
<tr>
<td>A person who requires referral for more specialized sexual healthcare</td>
<td>2.19 (1.18)</td>
<td>1.98 (1.01)</td>
<td>1.65</td>
<td>.053</td>
<td>0.25</td>
</tr>
</tbody>
</table>

Note: Lower scores indicate greater confidence. Significance level based on one-sided test. Statistically significant results are noted in italics. Results with small effect size (0.20-0.49) noted with an asterisk.
In the final section of SHEPS questions, participants were asked questions related to their attitudes regarding sexual health. According to pre-test answers, healthcare providers acknowledged their patients need help with their sexual problems before participating in the educational intervention. There was only one question with a small effect size:

(1) I want to be a resource for my future patients with sexual problems ($p < 0.067, d = 0.24$)

The rest of the questions in the section had no statistical significance and an effect size of less than 0.20, indicating no effect.
Table 3

<table>
<thead>
<tr>
<th>Pre- and Post-Test Attitudes Regarding Sexual Health</th>
<th>Pre M (SD)</th>
<th>Post M (SD)</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please state your level of agreement with the following statements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I want to be a resource for my future patients with sexual problems.</td>
<td>1.55 (0.85)</td>
<td>1.43 (0.71)</td>
<td>1.53</td>
<td>39</td>
<td>.067</td>
<td>0.24*</td>
</tr>
<tr>
<td>I won’t be able to provide care for patients with sexual problems.</td>
<td>5.90 (1.93)</td>
<td>5.93 (2.02)</td>
<td>-0.09</td>
<td>39</td>
<td>.466</td>
<td>-0.14</td>
</tr>
<tr>
<td>Sex is not an issue that physicians should deal with in their practices.</td>
<td>6.56 (1.25)</td>
<td>6.41 (1.47)</td>
<td>0.63</td>
<td>40</td>
<td>.267</td>
<td>0.10</td>
</tr>
<tr>
<td>Sexual problems are serious issues that should be addressed.</td>
<td>1.27 (0.59)</td>
<td>1.27 (0.55)</td>
<td>0.00</td>
<td>40</td>
<td>.50</td>
<td>0.00</td>
</tr>
<tr>
<td>Healthy women always have a lower sexual drive than men.</td>
<td>5.80 (1.86)</td>
<td>6.20 (1.32)</td>
<td>-1.73</td>
<td>39</td>
<td>.046</td>
<td>-0.27</td>
</tr>
<tr>
<td>One can never be too old for sex.</td>
<td>1.65 (1.05)</td>
<td>1.93 (1.72)</td>
<td>-1.23</td>
<td>39</td>
<td>.113</td>
<td>-0.19</td>
</tr>
<tr>
<td>I believe that being trained in human sexuality is important for health professionals</td>
<td>1.37 (0.83)</td>
<td>1.49 (1.17)</td>
<td>-0.73</td>
<td>40</td>
<td>.236</td>
<td>-0.11</td>
</tr>
<tr>
<td>I believe that I can use my human sexuality training effectively in a clinical setting.</td>
<td>1.35 (0.66)</td>
<td>1.40 (1.06)</td>
<td>-0.30</td>
<td>39</td>
<td>.384</td>
<td>-0.05</td>
</tr>
<tr>
<td>I do not intend to use my human sexuality training in a clinical setting.</td>
<td>6.23 (1.66)</td>
<td>6.46 (1.21)</td>
<td>-0.92</td>
<td>38</td>
<td>.181</td>
<td>-0.15</td>
</tr>
</tbody>
</table>

Note: Lower scores indicate greater levels of agreement. Significance level based on one-sided test. Statistically significant results are noted in italics. Results with small effect size (0.20-0.49) noted with an asterisk.

Learning Needs for Addressing Patients’ Sexual Health Concerns (LNAPSHC), section three describes the need for more education regarding select sexual health. All questions showed a significant change among the participants following the educational intervention.

Three questions indicated a statistically significant improvement and moderate to large effect sizes:

(1) Guide a discussion on sexual health ($p < 0.001$, $d 0.85$)
(2) Refer patient to other specialist or support groups \( (p < 0.001, d 0.63) \)

(3) Provide information to foster adaptation with sexual activity \( (p < 0.001, d 0.59) \).

Table 4

<table>
<thead>
<tr>
<th></th>
<th>Pre M (SD)</th>
<th>Post M (SD)</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please state your level of need in learning more about how to do the following . . .</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guide a discussion on sexual health</td>
<td>2.30 (1.04)</td>
<td>1.73 (0.85)</td>
<td>5.39</td>
<td>39</td>
<td>&lt; .001</td>
<td>0.85*</td>
</tr>
<tr>
<td>Comfortable in discussing sexual issues</td>
<td>1.98 (1.12)</td>
<td>1.55 (0.75)</td>
<td>2.98</td>
<td>39</td>
<td>.002</td>
<td>0.47</td>
</tr>
<tr>
<td>Obtain a comprehensive sexual health history</td>
<td>1.90 (1.07)</td>
<td>1.49 (0.82)</td>
<td>3.26</td>
<td>38</td>
<td>.001</td>
<td>0.52</td>
</tr>
<tr>
<td>Display an accepting, nonjudgmental attitude</td>
<td>1.55 (0.99)</td>
<td>1.35 (0.74)</td>
<td>1.84</td>
<td>39</td>
<td>.037</td>
<td>0.29</td>
</tr>
<tr>
<td>Identify biopsychosocial factors on altered sexual activity</td>
<td>2.20 (1.07)</td>
<td>1.95 (0.85)</td>
<td>1.88</td>
<td>39</td>
<td>.034</td>
<td>0.30</td>
</tr>
<tr>
<td>Clarify myths, misinformation, and controversy</td>
<td>2.15 (1.12)</td>
<td>1.75 (0.74)</td>
<td>3.25</td>
<td>39</td>
<td>.001</td>
<td>0.51</td>
</tr>
<tr>
<td>Refer patient to other specialist or support groups</td>
<td>2.30 (1.16)</td>
<td>1.75 (0.84)</td>
<td>3.97</td>
<td>39</td>
<td>&lt; .001</td>
<td>0.63*</td>
</tr>
<tr>
<td>Provide information to foster adaptation with sexual activity</td>
<td>2.40 (1.03)</td>
<td>1.90 (0.84)</td>
<td>3.73</td>
<td>39</td>
<td>&lt; .001</td>
<td>0.59*</td>
</tr>
<tr>
<td>Assess patient’s readiness to resume sexual activity</td>
<td>2.08 (1.02)</td>
<td>1.75 (0.87)</td>
<td>2.82</td>
<td>39</td>
<td>.004</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Note: Higher scores indicate greater levels of need. Significance level based on one-sided test. Statistically significant results are noted in italics. Results with moderate (0.50-0.79) to large (0.80 and higher) effect size noted with an asterisk.
Conclusion

To know the overall results of this study, will assist healthcare providers knowledge, skills and learning needs on FSD. The data collected provided insight to how the use of online educational module can be used with educating healthcare providers on FSD. By knowing the effectiveness of the online intervention will allow for additional educational modules to expand knowledge and skills on sexual health topics.

Chapter IV

Discussion of Findings

The aim of this project was to determine the effectiveness of an online educational intervention about female sexual dysfunction on the knowledge and self-efficacy of healthcare providers. Although the 71 participants needed for statistical significance was not reached, the data analysis still showed the project to be adequately powered with the 43 participants. The project was noted to have small effect size on the confidence of healthcare providers’ knowledge and a moderate effect size on the confidence of healthcare providers’ communicating with women regarding sexual health. A large effect size was noted with learning needs of the participants while the attitudes of the participants had an effect size less than small. The results suggest that online educational modules are effective in increasing confidence in knowledge and communication skills, which decreases their learning needs on female sexual dysfunction.

Confidence in Sexual Topic Communication

The participants reported having confidence in their ability to communicate, assess, and discuss sexuality and sexually related topics with patients across the lifespan in the post-tests. Studies by Ejegi-Memeh et al. (2020) and Pace et al. (2020) evaluated the communication
between the healthcare providers and women cared for in their practice. Ejegi-Memeh et al. (2020) addressed whether the sexual health needs of women were discussed while managing chronic health conditions by their healthcare providers. The women discussed having changes in their sexual health after the diagnosis of the chronic illness; however, the discussion was still not a priority with their health care providers (Ejegi-Memah et al., 2020). Whereas Pace et al. (2020) evaluated how comfortable nurse practitioners were with assessing sexual complaints and completing exams to diagnose and treat (Pace et al., 2020). The study showed NPs were responsive in assessing/addressing patient complaints and consistent with evaluation although many were not necessarily familiar with the terminology associated with discussing sexual health (Pace et al., 2020). The findings are similar to the increased comfort level in discussing sexual health that was seen in the Blair et al (2013). We noted no statistical significance in their ability to communicate with someone who identified as the same gender as theirs. This may be an area where healthcare providers already had an established confidence in their ability to communicate. The remainder of the questions reported an increase in their confidence to communicate ranging from small to large effect size further confirming effectiveness of the intervention.

Confidence in Sexual Topic Knowledge

In the next area, participants were asked the same questions in the prior section directed to confidence in their knowledge to care for patients’ sexuality and sexuality related topics. Only five questions showed a trending change in confidence. At the item level, the mean scores decreased from the pre-test and to the post-test, indicating that there was greater confidence among participants in the post-test. Dawson et al. (2017) discuss the complex physiological and psychological components required to obtain a detailed screening history and examination of
The goal of their guideline was to provide insights and practical advice to screen, diagnose and treat FSD (Dawson et al., 2017). By providing guidelines for healthcare providers is one way to increase their sexual topic knowledge. The increase in knowledge noted in this project is similar to what was seen in the literature. Blair et al. (2013) noted significance in competence to assess and diagnose as well as knowledge to refer women for a higher level of care. Blair et al. did not look at specific age groups of women as was examined in this study. Interestingly, this study noted no increased knowledge to care for young and middle-aged adults. The intervention did address knowledge confidence related to specific age groups of women with symptoms of FSD. This area could be explored more in-depth in future studies.

Attitudes Regarding Sexual Health

Women may be less willing to share their problems or concerns if healthcare providers are unwilling or uncomfortable with addressing sexual health. In assessing the mean scores of the attitudes of health care providers regarding sexual health, the lower scores indicated stronger agreement with the statements, while higher scores indicated stronger disagreement. A study assessing nurses' attitudes and beliefs to evaluate sexuality while obtaining health histories from patients was conducted by Reynolds and Magnan (2005). The study utilized a newly developed and tested survey entitled, Sexuality Attitudes and Beliefs Survey (SABS) to note any barriers to feeling comfortable and confident with sexual health in nursing practice (Reynolds & Magnan, 2015). Within this study, one question resulted in a significant change. Healthcare providers have the desire to be a resource to the women they care for. This is consistent with the literature. Blair et al, (2013) assessed the change in attitude and intent to treat. The results of their study noted a significant change in mean scores due to the workshop intervention. The intervention of this study discussed the need for healthcare providers to evaluate personal attitudes and biases when
addressing sexual health concerns. The participants reflected on their person biases and attitudes during the intervention which could lead them to being more aware of their attitudes. Healthcare providers not addressing sexual problems within the practice due to attitudes on the topic may lead to the number of women with untreated FSD having the potential to increase.

**Learning Needs of Healthcare Providers**

The learning needs of the health care providers showed a decrease in the mean score for each question within the assessment. The lower means indicated the education intervention effectively decreased healthcare providers' need for more knowledge. A study by Vic & Brekke (2017) noted a lack of academic training and experience of the GPs were barriers to dealing with the patients’ sexual health concerns. The general practitioners expressed the need for continuous education to adequately assist the patient's sexual health concerns (Vik & Brekke, 2017). The in-person workshop intervention used in Blair et al. (2013) and the online intervention in this study are both useful in helping healthcare providers’ learning needs on sexual health topics. While we did not look at the intervention in terms of the value to participants as in Blair et al (2013), the learning need of participants in this study was improved following the online intervention. The goal of the online educational intervention was to increase healthcare providers’ confidence, knowledge, and skills. The use of online education modules is an acceptable continuing educational tool to improve the learning needs of healthcare providers for FSD.

**Limitations**

There were limitations within the project. Many participants did not complete both pre and post-test, resulting in many incomplete surveys. There were a large number of survey questions within the study which may prevent participants from completion the post-test. The
study did not follow the participants to assess the long-term behavior changes in healthcare providers' daily clinical practice. The limited variety of healthcare providers' participation in the study did not allow for comparison evaluation between participants. Most participants were Caucasian female nurse practitioners. Therefore, additional studies would be needed to determine if there are differences in healthcare professionals, increased participation with fewer survey questions, and long-term use of the knowledge in the clinical setting.

**Practice Implications**

The results show that online education can be beneficial to improving knowledge on a specific topic. Increasing the topics of sexual education may be useful in giving healthcare providers the tools to increase the confidence needed to care for the women they serve. Topics include specific age groups, detailed description and use of screening tools, clarification of myths, misleading information and controversy, ability to perform a comprehensive sexual health history and exam, and providing specific resources and support groups. Follow-up with those healthcare providers in multiple intervals after an education module may prove beneficial in assessing the confidence of healthcare providers' self-efficacy to screen and care for FSD among their patients.

**Recommendations for Further Study**

This pilot study can use the content to create CE-based courses to increase health care providers' knowledge on the benefits of screening for sexual health concerns, including female sexual dysfunction. First, a more extensive follow-up study is needed to determine if there is a statistical significance by obtaining an adequate sample size. Recruitment must be expanded to assess providers across the US through more national organizations and groups of healthcare
providers caring for sexual health for cisgender women. Second, education-related healthcare providers' ability to care for sexual concerns and FSD among the LGBTQ+ community should be included. Third, this study included many items on the questionnaire. Future studies would have more participants complete full surveys by reducing the number of questions to decrease the participant burden. The intervention could be further refined with the content divided into specific age groups and the providers' experience level with treating FSD. The courses could be sectioned for novice, intermediate, and advanced healthcare providers utilizing the tools and resources to care for FSD. Finally, the practical use of the tools and assessments needed to diagnose FSD in the clinical setting should be evaluated. Determining the best practices and ways healthcare providers can seamlessly include screening for FSD and other sexual problems should be observed over several months following the educational module.

Conclusions

Female sexual dysfunction is a common problem among cisgender women. Healthcare providers can provide the necessary support and care for the women they serve by educating themselves to properly obtain sexual health history screening, physical exams, diagnoses, and treatment options. Online educational modules have enhanced healthcare providers' knowledge on various topics. The results of this study can be useful in creating education for healthcare providers in caring for FSD. Changes in the study layout, the number of survey questions, and accessibility of the post-test are necessary to ensure the completion of the educational module. Further studies are needed to determine the long-term effect of online education modules on the screening of female sexual dysfunction, attitudes and behaviors, effect on the self-efficacy of healthcare providers.
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