Patient Preference and Adherence

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REVIEW

Patients' perception and adherence to vaginal dilator therapy: a systematic review and synthesis employing symbolic interactionism

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Yaelim Lee

Red Cross College of Nursing, Chung-Ang University, Seoul, Republic of Korea

Background: Vaginal dilator (VD) therapy is often recommended for women receiving pelvic radiation therapy or experiencing pain and discomfort during intercourse, as well as for women with a congenital malformation of the vagina. VD use has both physical and psychological benefits; however, it often causes pain, discomfort, and adverse emotions, including embarrassment and loss of modesty, which often result in low adherence to therapy.

Objectives: The aims of this study were to explore the use and adherence of VD therapy in women, identify barriers and facilitators of therapy adherence, and suggest improvement strategies from the theoretical perspective of symbolic interactionism.

Methods: A systematic review of the literature was conducted using PubMed, CINAHL, and Scopus databases, with no year restrictions. Articles addressing the experience of women using VD therapy, as well as barriers and facilitators of therapy adherence were selected and analyzed. Then, the theoretical perspective of symbolic interactionism was introduced and applied to synthesize the results.

Results: A total of 21 articles were selected for the review. Most of the reviewed studies explored VD therapy in women who had undergone pelvic radiation therapy for gynecological cancer. Women's adherence to the therapy ranged between 25% and 89.2%, with great variance in definitions and methods for assessing therapy adherence. Among the five categories of identified barriers to therapy adherence, "unhelpful circumstances" and "negative perceptions toward the VD" were the two most frequently mentioned. The two most frequently reported facilitators of adherence among the six identified categories were "supportive interactions with health care providers" and "risk perception and positive outcome expectancies". On the basis of the perspective of symbolic interactionism, strategies for strengthening interactions with others (eg, health care providers, significant others, and support groups) are discussed in detail.

Conclusion: Strategic intervention regarding the decisive factors identified in the review can benefit women by enhancing their experience and adherence to VD therapy.

Keywords: sexuality, gynecological cancer, Müllerian agenesis, dyspareunia, barriers, facilitators

Introduction

A vaginal dilator (VD) is a smooth and cylindrical tool. When used in therapy, the VD is inserted into the woman's vagina regularly, with variable regimens depending on the woman's vaginal conditions.[1,2] The diameter of the dilator may increase according to the woman's condition and level of compliance with the therapy.[1] Use of the dilator has been supported by medical associations, such as the American Cancer Society and the National Forum of Gynecological Oncology Nurses, for its benefits offered to women's

Correspondence: Yaelim Lee
Red Cross College of Nursing, Chung-Ang University, 84 Heukseok-ro, Dongjak-gu, Seoul 06974, Republic of Korea
Tel +82 10 9950 2731
Email ylcaregiver@gmail.com

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genitalia.[3] However, its application remains controversial as some experts claim that there is a lack of strong evidence to support its alleged benefits, in addition to the potential risk of damaging adjacent structures and causing emotional distress.[4] Nevertheless, even these experts have recognized that the VD method can lengthen the vagina and can be used in different case scenarios with potential health benefits.[4,5]

Regardless of the reported benefits of VD therapy, the low level of compliance of women has remained a problem.[6,7] Previous studies have shown that women experience undesirable emotions while using the dilator, including embarrassment, anxiety, and fear; they also anticipate pain, loss of modesty, and experience a recollection of bad memories ranging from painful cancer treatments to sexual violence.[2,8] Other reasons that women hesitate to undergo VD therapy include various types and levels of pain, lack of information about its use, and a misunderstanding of its potential benefits.[2,3]

The purpose of this study was to explore the use and adherence to VD therapy in women, to identify barriers and facilitators of VD therapy adherence through a systematic review, and to suggest strategies for improvement, all while synthesizing the study results from the theoretical perspective of symbolic interactionism. The theoretical lens of symbolic interactionism was chosen based on the Health Belief Model framework, which proposes that an individual's health behavior is guided by perceptions, meanings, and beliefs.[9] By understanding how a woman perceives VD therapy, health care providers can identify decisive factors as targets for improving such perceptions and, thereby, improve experience and adherence to therapy.

Methods

This study was divided into the following two parts: 1) a systematic review of the use of VD therapy, barriers, and facilitators of adherence in women and 2) a synthesis of the available data from the perspective of symbolic interactionism. Electronic data collection was conducted using the PubMed, CINAHL, and Scopus databases. For the systematic review, no year limitation was applied in order to allow gathering comprehensive and integrative studies. The search terms used included "vaginal dilator", "experience", "perception", "adherence", "compliance", "factors", and "sexuality". An initial search yielded 164 articles. On the basis of the titles and abstracts, 50 articles were initially selected, which satisfied the following inclusion criteria: articles that 1) addressed women's experience with VD therapy, 2) described barriers to and facilitators of therapy adherence, 3) were published in English, and 4) were accessible in full length. The selected articles were reviewed in full text for their relevance to the purpose of the review; 29 articles were excluded from this process. A total of 21 articles were ultimately selected for the review (Figure 1). The results of the review were then synthesized from the perspective of symbolic interactionism, and strategies were suggested for improving women's experience with and adherence to VD therapy.

Results

Overview of selected studies

The characteristics of the 21 reviewed studies are shown in Table 1. The classification of study designs by Röhrig et al (2009)[10] was used to categorize the reviewed studies. Whereas most of the studies used quantitative study data, four (19%) used qualitative data. Among the 17 quantitative studies, six (28.6%) were interventional studies, whereas the others were observational studies and consisted of six studies that used a correlational study design, two studies that used a cross-sectional design, two case studies, and one study that used a retrospective cohort study design. Two studies involved a randomized controlled trial.[11,12] The four qualitative studies were conducted using semistructured interviews[2,8,13] or a structured questionnaire.[14]

The use of VD therapy in women

Gynecological cancer

Most of the reviewed studies (47.6%) focused on the use of VD therapy in women diagnosed with gynecological cancer. Additionally, two of the reviewed studies included women with rectal or anal cancer.[7,15] VD therapy is frequently prescribed to women with gynecological cancer, such as cervical or uterine cancer and colorectal cancer, who have undergone pelvic radiation therapy.[15–17] Pelvic radiation therapy has been reported to cause various side effects in the vagina, including an 88% chance of vaginal stenosis, fibrosis, vaginal narrowing and shortening, and a decrease in vaginal elasticity and lubricity.[2,3,8] These changes can cause dryness, discomfort, pain, bleeding, and irritation during intercourse; some women may even be unable to undergo vaginal examination due to severe discomfort.[2] Considering that women with gynecological cancer have a relatively higher 5-year survival rate (75%–85%) than women with other cancers, these side effects of cancer treatment can greatly affect their quality of life.[2]

VD therapy is frequently recommended to prevent and reduce the abovementioned side effects.[2,3] Its functions include minimizing vaginal stenosis and scarring, preventing adhesions, promoting improved vaginal healing, relaxing pelvic floor muscles, and preventing pain.[2,18] VD therapy

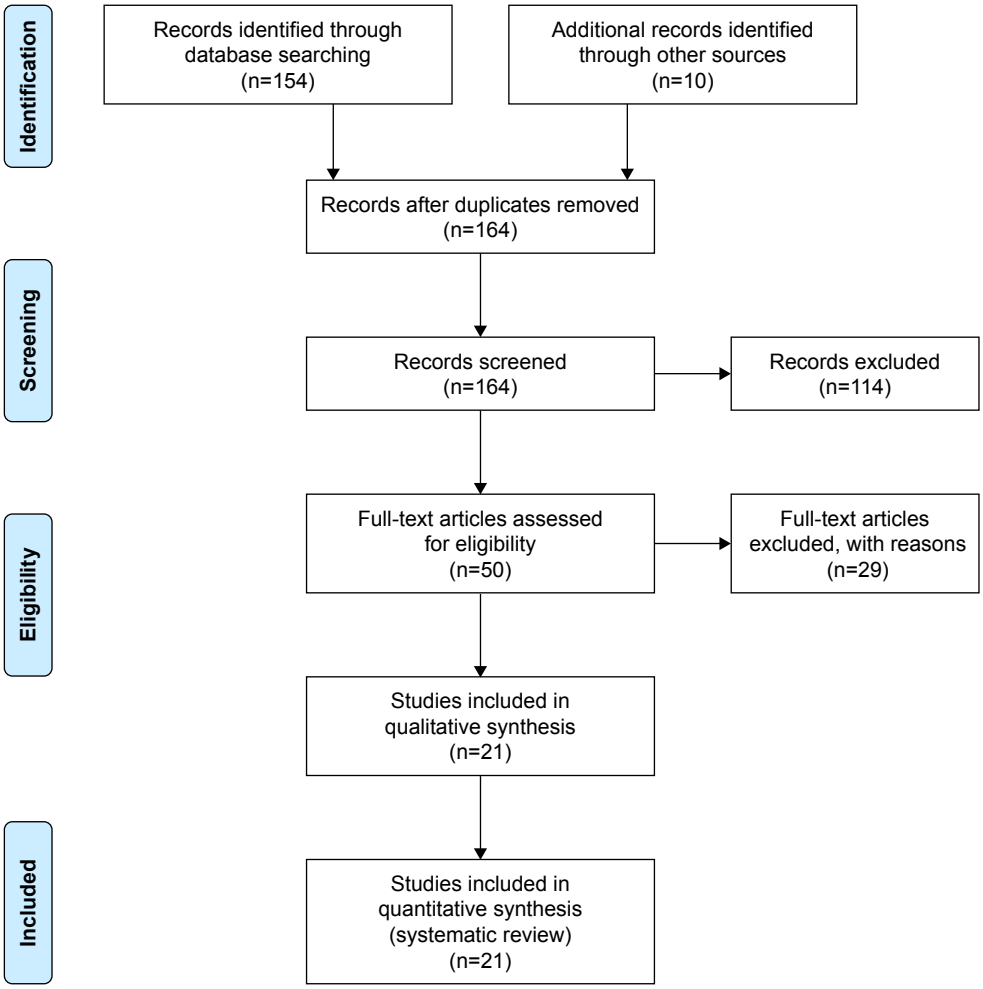

Figure 1 PRISMA 2009 flow diagram for selection of the studies.
Abbreviation: PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

also has psychological benefits for women, such as regaining confidence in the ability to insert an object into their vagina, an increased sense of control, and increased relaxation when experiencing pain.[19] In the past, women were advised to apply estrogen and resume sexual activity as soon as possible to prevent side effects from the treatment.[3] The advantages of VD therapy over past practices are that it does not require the application of estrogen in women for whom it is contraindicated and is not dependent on a woman's sexual partner.[3] In addition, VD therapy can preserve sexual function in women with anal cancer who undergo chemoradiation therapy by separating the lower vagina from the primary tumor area.[20]

Müllerian agenesis

VD therapy is also suggested for women with Müllerian agenesis, also known as Mayer–Rokitansky–Küster–Hauser (MRKH) syndrome, which is a congenital malformation of the inner vagina that results in a shorter length.[1,21] It is a relatively common syndrome, with an estimated occurrence of 1 per 5,000 females.[22] Six studies (28.6%) explored the use of VD therapy in women with MRKH syndrome. The use of a dilator was suggested as the first-line therapy prior to surgical adjustments, as it has been successful in forming a neovagina from the original vaginal tissue with fewer complications and better sexual function and sensation than surgical corrections.[1,22–24] Even for women considering surgery, VD therapy is also indicated, preoperatively and postoperatively, to prevent complications and achieve better outcomes.[1]

Dyspareunia

Another common indication for VD therapy in women is dyspareunia, or difficulty and pain associated with sexual intercourse; women develop fear and anxiety, which in turn causes deoxygenation and muscle tension that can aggravate the pain.[11,25] A single study explored the use of VD therapy in this population, with the results suggesting that VD therapy can benefit women both physically and emotionally.[25]

Table 1 Characteristics of the 21 reviewed studies

Authors (year)	Aim of study	Study design	Population explored on the VD therapy
Adeyemi-Fowode and Dietrich[14] (2017)	To explore the experience of dilator use for neovagina creation in women with MRKH syndrome	Qualitative study with structure questionnaire	13 participants diagnosed with MRKH syndrome – Mean age: 26 (±11.4) years – Mostly Caucasian
Bakker et al[27] (2017)	To test the feasibility of a nurse-led sexual rehabilitation intervention targeting sexual recovery and vaginal dilatation	Quantitative longitudinal intervention study	34 participants who received pelvic EBRT/BT for gynecologic cancer – Mean age: 40 (±11) years – Using Dutch language
Ketheeswaran et al[24] (2017)	To examine the effect of intensive VD therapy for neovagina creation	Retrospective cohort study	68 women diagnosed with MRKH syndrome – Median age: 18 years – Women treated in Australia
Bakker et al[13] (2015)	To explore the determinants of women's adherence to dilator use	Qualitative study with semistructured interviews	30 participants who received pelvic EBRT/BT for gynecologic cancer – Mean age: 45 years – Women treated in the Netherlands
Law et al[7] (2015)	To assess the adherence and efficacy of VD use in women after pelvic RT	Prospective intervention study	109 patients with rectal or anal or endometrial cancers self-reported use – Median age: 58 years – 75% White, 8% Asian, 6% each African American and Hispanic
Iavazzo et al[31] (2015)	To assess patients' experience on gynecological cancer management	Retrospective cross-sectional study	194 women with gynecological cancer – Mean age: 59 years – Women treated in the UK
Son et al[15] (2015)	To examine the compliance with VD use and factors related to the development of vaginal stenosis	Prospective observational correlational study	54 women who received pelvic RT for rectal or anal cancer – Median age: 55 years – Women treated in the USA
Antosh et al[11] (2013)	To compare rates of de novo dyspareunia in women with/without VD use after posterior colporrhaphy	Randomized controlled trail	Women who received posterior colporrhaphy for pelvic organ prolapse (30 in dilator group and 30 in control group) – Mean age: 53.9 years – Women treated in the USA
Bonner et al[8] (2012)	To examine the patient experience and facilitators/barriers related to VD use	Qualitative study with semistructured interview	15 women who received pelvic RT for gynecological cancer in the last 2 years and were prescribed VD use – Mean age: 53 years – Women treated in Australia
Brand et al[3] (2012)	To determine whether an educational intervention would facilitate compliance with VD	Prospective intervention study	60 women who received RT for gynecological malignancy – Median age: 60 years – Women treated in Australia
Edmonds et al[22] (2012)	To explore the efficacy of VD in MRKH syndrome management	Retrospective sequential intervention study	245 women with MRKH – Mean age: 18.6 years – Women treated in the UK
Cullen et al[2] (2012)	To assess women's experience with VD and influencing psychosocial factors	Exploratory qualitative study with semistructured interviews	10 women with gynecological cancer and prescribed VD use after RT – Mean age: 52 years – Primarily White (60%), one each Black, East-Indian, Asian-Canadian, and Eastern European
Bach et al[1] (2011)	To assess VD therapy in women with MRKH syndrome	Retrospective correlational study	80 women diagnosed with MRKH – Mean age: 19.5 years – Women treated in the UK
Friedman et al[28] (2011)	To determine demographic, clinical, and psychosocial factors associated with adherence to VD	Retrospective correlational study	78 women with endometrial cancer treated with high dose rate brachytherapy – Mean age: 64.3 years – 82.1% White, 16.7% Black, and 1.3% others
Punt[6] (2011)	To assess the compliance of VD use in women after receiving RT for cervical or endometrial cancer	Prospective correlational study	75 women who received RT for either cervix or endometrial cancer – Mean age: 63.24 years – Women treated in the UK

(*Continued*)

Table 1 (*Continued*)

Authors (year)	Aim of study	Study design	Population explored on the VD therapy
McVearry and Warner[30] (2011)	To evaluate how certain physical therapy can augment VD therapy	Case study	One case of a 36 years old Asian women with MRKH syndrome
Stratton et al[26] (2007)	To describe the management of GVH disease	Retrospective correlational study	29 women with GVH disease – Median age: 43 years – Women treated in the USA
Jeffries et al[12] (2006)	To explore the effect of group psychoeducational intervention for compliance with VD	Randomized controlled trial	Women with gynecological cancer (26 in intervention and 21 in control group) – Mean age: 42.98 (±10.26) years – Women treated in Canada
White and Faithfull[41] (2006)	To get the overview of current practice related to VD in the UK	Cross-sectional study	52 gynecological oncology nurse specialists and 40 RT centers – Experience with women treated in the UK
Nadarajah et al[23] (2005)	To explore the sexual satisfaction among women with vaginal agenesis who received VD	Retrospective correlational study	60 women with vaginal agenesis – Mean age: 20.5 years – Women treated in the UK
Idama and Pring[25] (2000)	To review the management of women with dyspareunia	Case study	18 women with superficial dyspareunia – Mean age: 26 years – Women treated in the UK

Note: Data are shown as mean (±SD).
Abbreviations: EBRT/BT, external beam radiation and intrauterine/brachytherapy; GVH, graft-versus-host; MRKH, Mayer–Rokitansky–Küster–Hauser; RT, radiation therapy; VD, vaginal dilator.

Other conditions

Other targeted diseases for VD therapy included in the review were pelvic organ prolapse[11] and graft-versus-host (GVH) disease.[26] VD therapy was recommended to prevent de novo dyspareunia in women who received posterior colporrhaphy owing to pelvic organ prolapse; however, no improvement was found compared to nondilator users.[11] Chronic GVH disease is one of the most common complications of allogeneic hematopoietic stem cell transplantation.[26] Commonly affected sites include the skin, mouth, eyes, and liver. In some cases, genital GVH can occur with vaginal or vulvar pain, irritation, erythema, and scarring.[26] VD therapy has also been recommended for preventing or relieving labial adhesion.[26]

Women's adherence to the therapy

The reports describing women's adherence to VD therapy varied widely not only in terms of adherence rates but also how the term adherence was defined and assessed. The adherence rate ranged between 25%[13] and 89.2%.[6] All of the studies relied on women's self-reported use of VD. In four (19.0%) of the reviewed studies, adherence to VD therapy was defined as the use of VD a certain number of times over a specified period of time, for example, at least twice a week.[27,28] In four other studies, adherence to the therapy was described more generally, as the overall completion of the therapy, for example, the patient completing the use of the dilator by the end of the predetermined treatment period[13] and upon achieving the goal of satisfactory intercourse.[22] Adherence to VD therapy was assessed as a categorical question in three studies (14.3%). For example, women were asked to describe their level of compliance by choosing "nonuser", "user", or "struggler".[2] Women who continued to use VD for a certain period of time were considered as having adhered to therapy in three other studies (eg, still using the dilator after 12 months).[3] One study inferred women's adherence to VD therapy when there was evidence of their participation in health care provider dilation sessions.[3] Conversely, six other studies did not clearly mention how adherence was defined or assessed (eg, one study described participants' adherence as being "good" without reporting how it was being assessed).[15]

Factors related to adherence to the therapy

Barriers

The barriers identified in the studies were grouped and analyzed according to the following five categories: 1) negative perceptions toward VD, 2) uncertainty about therapy, 3) unfavorable accompanying physical signs and symptoms, 4) less supportive interactions with health care providers, and 5) unhelpful circumstances.

Negative perceptions toward VD

In 23.8% of the selected studies, negative perceptions toward VD were frequently mentioned as a major barrier to VD therapy. The use of VD reminded some women of traumatic gynecological cancer treatment or their ongoing battle with cancer.[8,13] Some women perceived VD as arduous, annoying,

or bothersome chore.[2,8,13] Others related VD to sexuality, perceiving the device as an embarrassing sex toy or sex aid, which for some was contrary to their cultural beliefs,[2,29] still others reported perceiving VD as intrusive, violating, unnatural, mechanical, and cold.[2,28]

Uncertainty about therapy

Women expressed uncertainty about VD as a barrier to therapy adherence in 23.8% of the selected studies. They doubted either the feasibility of VD insertion itself or whether the therapy would be successful.[13,14] Some women had motivational difficulties, feeling that VD would be noneffective or a waste of time.[8] Uncertainty about VD therapy was often associated with prioritizing other cancer-related treatments instead,[2] forgetting to use VD,[8,14] or not making appointments for VD counseling.[1]

Unfavorable accompanying physical signs and symptoms

Four (19.0%) of the selected studies reported that experiencing pain, discomfort, and vaginal dryness, or seeing blood and discharge, made women anxious about using VD.[2,7,13,28] These in turn acted as barriers to continuous VD use.

Less supportive interactions with health care providers

Women's health care providers played an important role in VD therapy. Three of the studies (14.3%) reported that lack of instruction, too much information, or conflicting information from different health care providers were barriers to VD use. Consequently, after information sessions, some women misunderstood VD therapy as a therapy for sexual stimulation or had negative first impressions about it because the dilators presented by the health care providers were perceived as ugly and hard (many women preferred the dilators to be made of soft material).[2,8,13] Some women reported that the absence of follow-up visits with their health care providers about VD therapy was another barrier, as it made them feel the therapy was unimportant.[13,22] Additionally, in two studies, women expressed worry about being judged by others[2] or had nonspecified conflicts related to VD use, which in turn acted as barriers to the therapy.[22]

Unhelpful circumstances

In six selected studies (28.6%), several circumstances were mentioned as barriers to VD therapy. Some women reported having financial difficulties paying for the VD set,[13] problems finding a private place for VD use,[8] or schedules too busy for conducting regular therapy.[7] Other women reported that the health delivery system for obtaining the VD set, which requires visiting public pharmacies or adult stores, was embarrassing and thus represented a barrier to therapy.[2] Personal and medical conditions were also reported as barriers to use, for example, learning difficulties, multiple congenital abnormalities, or mental health issues,[22] as well as cancer treatment side effects, such as fatigue, or treatments requiring hospital admission.[7]

Facilitators

The facilitators reported in the studies were analyzed according to the following six categories: 1) positive perspectives toward VD, 2) risk perception and positive outcome expectancies, 3) precise planning and personal strategies, 4) supportive interactions with health care providers, 5) supportive interactions with significant others, and 6) helpful circumstances.

Positive perspectives toward VD

In four of the studies (19.0%), women emphasized positive perspectives toward VD as a facilitator of the therapy. For these women, VD was an important therapy that made them feel better and retain a sense of normality.[8,22] Their sense that vaginal adhesion was under control or that they themselves played an active role in postoperative recovery contributed to their continuous use of VD.[11,13]

Risk perception and positive outcome expectancies

Five of the reviewed studies (23.8%) addressed women's perceptions of risk, as well as positive outcome expectancies that could prevent or reduce these risks and in turn facilitate VD therapy. Women's perceived risks or concerns that ultimately contributed to therapy adherence included gaining vaginal adhesion and occlusion from cancer treatments that resulted in painful vaginal examinations or unsatisfactory future sexual lives.[8,13,28] The actual experience of pain during vaginal examination[3] or bleeding after a short period of noncompliance[13] served as facilitators of VD therapy. In turn, positive therapy expectations of preventing or relieving these risks and concerns – for example, believing that the therapy would help prevent stenosis,[8] ease pelvic examinations,[28] and relieve pain[25] – were also proposed as facilitators.

Precise planning and personal strategies

Establishing a detailed schedule in terms of when and how to perform VD therapy was considered as an important facilitating factor in four studies (19.0%). Some women completed the therapy at a designated time[13] or made VD therapy a routine.[8] For women with negative perceptions of

VD, reframing the therapy was considered helpful, such as by redefining it as an extension of a medical treatment and thereby desexualizing it.[2,8,30] Personal strategies helpful in therapy adherence included relaxation (eg, taking showers or warm baths and listening to music) and distraction (eg, reading books and engaging in self-talk) methods.[2,13,30] Adding enjoyment to the therapy by using it for sexual purposes[8] was another facilitative strategy.

Supportive interactions with health care providers

Almost one-half of the studies (47.6%) reported supportive interactions with health care providers as a facilitating factor for VD therapy. Efficient educational counseling was described as detailed: one-on-one sessions,[30] 20–30 minute long consultations,[31] in a direct and straightforward manner,[2] with the provision of additional take-home educational materials (eg, video tutorials of dilator use).[14] The importance of multidisciplinary counseling consisting of psychologists, oncology nurses, and VD therapy nurse specialists was also highlighted.[1,13,22] Women were reassured and motivated by such counseling,[24,27] by positive care provider feedback (eg, "you are doing well"),[13] and by several consecutive counseling sessions.[30]

Supportive interactions with significant others

Four other studies (19.0%) suggested the importance of interactions with significant others in facilitating VD therapy. Support from partners and spouses was the most frequently mentioned,[8,13,30] while support from friends and daughters was also considered helpful.[8,13] Additionally, group psychoeducation,[12] regular support group meetings, and anonymous online chatting[22] were recommended for better therapy adherence.

Helpful circumstances

Finally, being sexually active,[1] being in good physical condition with few comorbidities,[28] and being over the age of 40 years[6] or 50 years[3] were also mentioned as facilitators of VD therapy in some of the selected studies.

Discussion

This systematic review of 21 studies provides an overall picture of how VD therapy has been used by women, as well as its adherence and assessment; moreover, the barriers and facilitators of VD therapy have been described. From the perspective of symbolic interactionism, several suggestions have been identified for improving the experience of and adherence to VD therapy by women.

Overview of symbolic interactionism

Symbolic interactionism is a theoretical perspective in which humans are considered as social beings constructed from their various interactions with the surrounding environment.[32,33] From this standpoint, human beings and society are often described as occupying two sides of the same coin, implying that neither can be separated from the other and that they continuously interact.[34] Symbolic interactionism comprises the following three basic premises: first, an individual's actions are driven by meanings; second, meanings are established by continuous social interaction with other individuals and society; and third, these meanings and an individual's interpretations of the world are likely to change continuously in the course of these interactions.[32] For example, a woman's past experience with hospital admission will affect her future experiences and expectations, which in turn will affect her attitude and behavior toward hospitals.[33] From the perspective of symbolic interactionism, human experience and behavior constitute complex and unstable concepts driven by the symbols and meanings established from various interactions with the surrounding environment and within the self.[32,35]

Application to VD therapy

Applying the perspective of symbolic interactionism to the phenomenon of compliance with VD therapy provides new insight into how women establish their individualized perceptions of VD, as well as the kinds of social and interpersonal interactions that affect this process. The perspective suggests that health care providers should consider intervention strategies on the basis of how well they can help women establish positive perceptions and meanings, which can in turn improve their experience and adherence to VD therapy. As shown in previous studies, symbolic interactionism can help explain complex concepts, including sexuality, beyond the biomedical model, focusing on their social and cultural contexts.[34,35] Both interpersonal interactions and interactions within the self are important in establishing VD-related meanings and perceptions.[32,36]

Strengthening symbolic interactions with others

Women's interactions with health care providers were the most frequently mentioned influential factor for VD use; thus, it follows that such interactions must be strengthened to enhance adherence to VD therapy. For instance, 14.3% of the reviewed studies reported less supportive interactions with health care providers as a barrier to VD therapy, whereas 47.6% of the studies described supportive interactions with health care providers as an important facilitator

of the therapy. In light of a study reporting that the purposes perceived by women for using VD were established through conversations with health care providers,[2] providers must allow sufficient time and make substantial efforts to help women understand the objectives of the therapy and to establish positive VD-related meanings and symbols, both of which can motivate women to adhere to the therapy. Moreover, as compliance with the VD therapy was considerably higher when women had both an established rapport with their health care providers and were engaged in continuous interaction and supervision during the therapeutic course,[1,22,33] health care providers should demonstrate consistent concern with how their patients are complying with the therapy as well as provide adequate and empowering feedback.

In addition, supportive interactions with significant others, or with persons sharing a strong commitment and with those able to exert an influence on the patient, facilitated VD use in 19% of the studies. Human beings are greatly and continuously affected by how others think of them and what others expect from them.[33] Regardless of gender, sexuality defines how humans think of themselves, how they think of others, and how they relate to what others think of them to how they think of themselves.[34] Intimate individuals with whom women share and communicate their sexual lives may play an important role in shaping women's sexuality and perceptions of VD use.[37] Concerns and fear about judgment from significant others can contribute to avoidance by the woman to disclose VD use so as to prevent embarrassment.[2] However, when adequate support is provided from interactions with significant others, it can serve as an important source of strength for adherence to VD therapy. As symbolic interactionism claims, communication is a mean of forming and sharing symbols, helping people view the world from each other's points of view, and encouraging mutual understanding.[34] In this sense, considering the relationships and interactions with significant others, encouraging communication about VD, and including these factors in the care process as well as in research can help achieve better outcomes with VD therapy.

Additionally, the results of the review suggest that encouraging interactions with others who share the same health concerns or who are undergoing the same therapy could help improve adherence. These results are consistent with previous studies on the efficiency of support groups in addressing sensitive sexuality issues.[38,39] Moreover, a website helpline, organization, or community that provides information about VD may also affect women's process of forming meanings and perceptions by serving as a reference group.[33]

Strengthening symbolic interaction within the self

According to symbolic interactionism, women's attitudes and behaviors are determined by the perceived meanings, advantages, and disadvantages of VD therapy through various interactions.[2,32] These interactions occur not only among individuals but also within the self.[33] In 19% of the selected studies that reported precise planning and personal strategies as facilitators of VD therapy, some women had continuous internalized conversations, also described as self-talk, to reframe the definition of dilator use and to overcome adverse emotions regarding VD.[2] Through the self-interaction process, they created coping mechanisms, such as converting aversion into humor, reframing VD use in the context of medicine and treatment, intentionally ignoring the vaginal area, and ritualization or routinization of the insertion process.[2,8,30]

In addition, while engaging in self-interactions, some women established meanings and symbols related to both their sexuality and the therapy.[32,36] Many women established a concept of sexuality and VD use to regain their normal sexuality.[8,22] Being "normal" is derived from continuous social interactions and includes the perception of having a normal vagina of standard size and function.[22,40] This concept of being normal as well as expectations regarding the treatment process need to be carefully examined, as they may differ among individuals due to varying interactions and internalizing processes.[22]

The concept of sexuality needs to be understood in light of each individual's personal background, including cultural and societal aspects, which change continuously as a consequence of interactions and internalization.[34,40] Women may not be able to achieve a sense of sexual normality only through anatomical correction. Thus, VD therapy should not be approached only as a mean to correct the anatomical structure of female genitalia; rather, it should be viewed as affecting the individual as a whole.[22] In this sense, regular follow-ups for the assessment of psychosocial well-being and adequate support may be beneficial and worthy of consideration.[22]

Conclusion

This systematic review explored women's use, barriers, and facilitators of VD therapy adherence. Taken from the theoretical lens of symbolic interactionism, strategies for strengthening women's externalized interactions with others, including health care providers, significant others, and support groups, and internalized self-interactions to enhance therapy adherence are suggested in detail. By incorporating

these findings and suggestions and conducting related studies, health care providers can better understand women's decision-making process, acknowledge various social interactions and factors that affect healthy behavior, incorporate these interactions and factors into health care plans, and participate positively in interactions with women to achieve better adherence to therapy and produce improved health outcomes.

Availability of data and material

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Disclosure

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