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Satisfaction with a Vacuum Constriction Device for Erectile Dysfunction among Middle-Aged and Older Veterans

Sherry A. Beaudreau PhD, ABPP[a,b,c*], Katie Van Moorleghem JD, MS[a,d*], Stacy M. Dodd PhD, ABPP[e], Victoria Liou-Johnson PhD[a,d], Madhuvanthi Suresh MS[a,d], and Christine E. Gould PhD, ABPP[b,f]

[a]Sierra Pacific Mental Illness Research Education and Clinical Centers, VA Palo Alto Health Care System, Palo Alto, California, USA; [b]Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, California, USA; [c]School of Psychology, University of Queensland, Brisbane, Australia; [d]Pacific Graduate School of Psychology, Palo Alto University, Palo Alto, California, USA; [e]Behavioral Medicine Department, Psychology Service, VA Palo Alto Health Care System, Palo Alto, California, USA; [f]Geriatric Research, Education, and Clinical Center, VA Palo Alto Health Care System, Palo Alto, California, USA

ABSTRACT

Objectives: To investigate satisfaction with a vacuum constriction device for middle-aged and older male Veterans with erectile dysfunction and their female partners.

Methods: Patients (N = 57; mean age = 64.28 years; SD = 8.7) received comprehensive education and training and ongoing follow-up of device use, which included a semi-structured interview. Female partners (n = 41) also rated their satisfaction with the device.

Results: Over 96% of patients (n = 53/56 responses) endorsed the ability to maintain an erection with the device and 100% (n = 56/56 responses) indicated they would recommend the device to others. Female partners generally rated sex as better with the device (83.8%; n = 31/37 responses). Physical discomfort using the device was reported among 23% of patients (n = 16), and often due to difficulty or pain with the constriction bands. Difficulty obtaining erections with the device, though infrequently reported, was more common with older age.

Conclusions: The majority of male patients and their female partners receiving comprehensive training for vacuum constriction device use reported satisfaction with the device.

Clinical Implications: Vacuum constriction devices can be highly effective in improving the sexual health and intimacy of Veterans of all ages experiencing erectile dysfunction.

KEYWORDS

Male sexual dysfunction; sexual dysfunction; vacuum pump; aging; veterans

Male erectile dysfunction (ED) is the most prevalent sexual dysfunction diagnosis among older men (Albersen, Orabi, & Lue, 2012). Men with chronic medical conditions such as hypertension, dyslipidemia, and diabetes are particularly at risk for ED (Albersen et al., 2012; Mulhall, Luo, Zou, Stecher, & Galaznik, 2016). Among men aged 75 years or older, as many as 77.5% have experienced ED (Saigal, Wessells, Pace, Schonlau, & Wilt, 2006). According to a systematic review, untreated ED negatively impacts psychosocial functioning including diminished sexual quality of life based on sexual relationships and sexual satisfaction, and has associations with adverse mental health outcomes, such as low confidence, low self-esteem, and high depressive symptoms (McCabe & Althof, 2014). Among 606 older adults of both sexes from the Successful Aging Evaluation study (SAGE), high depressive symptoms emerged as the most robust correlate of poor sexual health, over and above age, sex, physical functioning, general cognitive functioning, anxiety symptoms, and perceived stress (Wang et al., 2015).

First-line treatment for ED involves lifestyle changes, such as engaging in exercise, improving dietary choices, quitting smoking, and under medical supervision, eliminating or reducing the usage of medication found to contribute to ED (Heidelbaugh, 2010). Pharmacological interventions with phosphodiesterase type 5 inhibitors (PDE5i) are common, with sildenafil being the most popular and effective medication for ED (Carvalheira, Pereira, Maroco, & Forjaz, 2012). Yet, these medications can have high discontinuation rates (48.9%) due to adverse effects such as headache, flushing, dyspepsia, rhinitis, and

CONTACT Sherry A. Beaudreau sherryb@stanford.edu VA Palo Alto Health Care System, Sierra Pacific Mental Illness Research Education and Clinical Centers (MIRECC MC: 151Y), Palo Alto, CA, 94304

*Shared first authorship.

abnormal vision, and non-effectiveness in some patients (Carvalheira et al., 2012; Heidelbaugh, 2010). Insufficient education regarding the medication can lead to ineffective use, which lowers the medication's success rate (Atiemo, Szostak, & Sklar, 2003). Further, these medications have many contraindications such as co-administration with alpha-adrenergic blocking agents and nitrates (Huang & Lie, 2013). If ED is not alleviated with first-line treatments, patients are offered second-line treatments, including vacuum constriction pump devices (Najari & Kashanian, 2016). Devices are often prescribed as a secondary-line treatment because they require more time and motivation on the part of the patient than taking medication. These devices consist of an acrylic cylinder that operates by hand pump or battery to create a vacuum (negative pressure) and is employed to bring blood into the penis to obtain an erection. To retain the blood and maintain the erection, a rubberized constriction band is placed at the base of the penis for up to a half-hour.

Prior research indicates that vacuum constriction devices facilitate erections in up to 90% of males (Albersen et al., 2012). Success rates, including continued use of the device, are associated with the amount of training and education men receive on device usage and possible side effects (Atiemo et al., 2003; Lewis & Witherington, 1997). However, comprehensive training alone may not be enough. In one study, over two-thirds of participants with ED discontinued using a vacuum constriction device by three-year follow-up, despite receiving a medical evaluation and multimodal training in device use by a device representative (Dutta & Eid, 1999). On average, participants reported discontinuing the device 4 months after receiving it. Typical reasons for discontinuation included participants reporting the device was unwieldy, too painful to use, or ineffective for improving erections. Device training aimed at fostering both realistic expectations and proper usage of the device has potential to increase treatment success.

The current study examined sexual satisfaction outcomes in male patients receiving comprehensive training in the device. Unlike many settings for erectile dysfunction in which mental health providers may not have a presence, the setting for this training occurred in the context of interdisciplinary team care from both medicine and psychology. Given the potential psychological barriers to device use, this study offered a unique opportunity to examine device training outcomes when delivered by team that includes psychology. Sexual satisfaction outcomes examined in this evaluation included erectile functioning, ability to engage in sexual activity, and challenges and benefits of device use. Additionally, the evaluation examined satisfaction with the device among female partners.

Methods

An Andrology clinic in a northern California VA health-care system conducted a program evaluation to assess patient satisfaction with the vacuum constriction device to treat ED. The Andrology clinic is an interdisciplinary clinic staffed by physicians, clinical psychologists, and medical and psychology trainees that provides comprehensive evaluations and treatment of male patients referred for sexual functioning difficulties, including ED. The evaluation was not restricted to heterosexual male patients, though the majority seeking treatment with the device had female sexual partners. Male patients received training and education in the device prior to using it. Semi-structured interviews of their satisfaction occurred during a follow-up visit. Female partners who accompanied patients to the appointments also rated satisfaction with the device. Data for this project were originally collected to improve clinic procedures. Institutional Review Board (IRB) approval, including a waiver of consent, was subsequently obtained from Stanford University School of Medicine to conduct a medical chart review and to summarize findings of the program evaluation on satisfaction with the vacuum constriction device. Information provided herein abides to the IRB approval.

Andrology clinic procedures

During their initial appointments, patients met with medical providers to receive a comprehensive physical examination and review of completed laboratory results, including an endocrine panel. They met with psychology providers to complete a psychosexual assessment. The presence or absence of medical problems or psychiatric illness

was ascertained from current diagnoses recorded in the patient's medical chart. Psychosexual functioning was determined from a comprehensive interview conducted by supervised psychology interns or licensed psychologists. The interview included questions to determine the nature of the sexual issues, contexts in which they occur, beliefs and knowledge about sex and sexual functioning, and psychological distress about sexual performance or sexual functioning problems.

Patients included in this evaluation had been provided a vacuum constriction device from Osbon Erecaid™ (Osbon Medical Systems, Augusta, GA) as part of their treatment plan. All patients were given in-person device training, including video demonstrations, written instructions, and discussions with psychology about realistic expectations for device use, the importance of practice, and the recommended steps for practice. The clinic also provided live demonstrations of device use by a vacuum constriction device representative. In brief, to use the device the patient must assemble the device parts; apply lubricant to the cylinder and penis; load a tension ring on the cylinder; place the cylinder around the penis use the pump to create a vacuum and draw blood into the penis; and slide the tension ring down to the base of the penis to maintain the erection.

Satisfaction interview

Patients completed a semi-structured interview regarding device satisfaction within the first year following device distribution. The satisfaction interview was a qualitative, face-valid measure developed by the interdisciplinary team at the VA Andrology Clinic and consisted of yes/no, multiple-choice, and open-ended questions where patients could provide responses and additional comments. The interview encompassed a) demographic information, b) adequacy of written instructions and a demonstration video, c) frequency and ease of device usage, d) physical experiences of use, e) partner experience with device, f) sexual satisfaction subsequent to device usage, and g) any psychological or physical discomfort with using device. Female sexual partners of Veterans in attendance who were willing to complete a brief questionnaire were also surveyed regarding their satisfaction with the device.

Patients answered open-ended questions regarding their experiences with vacuum devices relating to common device difficulties, how sexual activity improved since treatment with the vacuum constriction device, and how sexual activity was worse with the device. Patients with more than one sexual partner were asked to focus on the primary one when responding to interview questions. Interviews were transcribed by the interviewer. The frequencies of thematic groupings of responses to these open-ended questions provided additional characterization of patient treatment satisfaction with the device. Descriptive analyses and frequencies of patient and female partner responses to yes/no and multiple-choice questions were conducted using SPSS 21.0. Spearman's correlations were conducted to determine how patients' age was associated with their satisfaction ratings. Spearman's correlations were chosen due to the small sample size and non-normal distribution.

Results

Patient characteristics and outcomes

Male patients (N = 57) completing the satisfaction interview were predominantly older adults (mean age = 64.28 years; SD = 8.7; min-max age = 40–83). Patient characteristics based on ethnic/racial background, relationship status, and length of time using the device are summarized between middle-aged and older patients (Table 1). At the time of the interview, most patients (n = 43 of 54 responses; 76.6%) had been using the vacuum constriction device for less than 6 months, compared with 20.4% (n = 11) who had been using the device for 6 to 12 months.

Regarding treatment outcomes for all patients, 93% (n = 53 of 55 responses) of patients reported that they were able to obtain an erection with the device. The majority of patients (90.7%; n = 49 of 54 responses) indicated that the device enabled them to engage in intercourse, and 92.0% (n = 46 of 50 responses) indicated that intercourse was improved with the device. Compellingly, 100% (n = 56) of patients stated that they would recommend the device to other men with ED. They also reported

Table 1. Frequency (*n*) and Percentage (%) of patient characteristics of middle-aged and older adults.

	Middle-aged (n = 24)	Older adult (n = 33)
Variable	*n (%)*	*N (%)*
Ethnicity		
White	16 (76.2)	19 (65.5)
Black or African American	3 (14.3)	7 (24.1)
Latino	1 (4.8)	2 (6.9)
Other	1 (4.8)	1 (3.4)
Marital Status		
Never married	1 (4.2)	0 (0.0)
Divorced	4 (17.4)	4 (13.3)
Separated	0 (0.0)	3 (10.0)
Married/Committed relationship	17 (73.9)	22 (73.3)
Living together, Not committed	1 (4.3)	1 (3.3)
Length of time using device		
1 to 3 months	10 (43.5)	16 (51.6)
3 to 5 months	7 (30.4)	10 (32.3)
6 to 12 months	6 (25.0)	5 (16.1)

Patients were categorized as either middle-aged (<65-years old) or older adults (≥65-years old). Ethnicity information was available for n = 50 (missing for n= 7). Marital status was available for n = 53 (missing for n = 4). Length of time using vacuum constriction device was available for n = 54 (missing for n = 3).

satisfaction with device education and training; 98.2% (n = 54 of 55 responses) indicated that the written instructions for device use were adequate and 96.2% (n = 51 of 53 responses) rated the videotape demonstration as helpful. Most patients (93.9%; n = 46 of 49 responses) stated that their sexual relationship with their partner was satisfactory or very satisfactory after treatment. No comparison baseline rating was available for this question; however, given that patients overwhelmingly endorsed sex as better with the device, this level of satisfaction among patients likely represents an improvement.

Despite overall satisfaction, patients also described some discomfort with device use. Over a quarter of the patients interviewed (28.6%; n = 16 of 56 responses) reported physical discomfort when using the device, especially difficulties with the bands in terms of placing them on the cylinder (18.2%; n= 10 of 55 responses), sliding them on the penis (12.5%; n = 7 of 56 responses) or removing them after sex (16.4%; n= 9 of 55 responses). Further, 9.1% (n = 5 of 55 responses) of patients stated that they experienced some psychological discomfort, such as frustration and lack of spontaneity when using the devices. The frequency of responses between middle-aged and older patients are in Table 2.

On open-ended questions, patients elaborated on physical and psychological discomforts, and benefits of the device (Table 3). Physical issues included trouble with band placement and overpumping, bruising due to inadequate lubrication, and inability to ejaculate due to the bands. Psychological discomforts included frustration with using the device, viewing the device as "artificial," partner reluctance, and "cooling down of desire." Benefits included increased self-esteem and decreased "fear of failure" during sexual activities.

Age differences

Older age of patients was more associated with a "No" response to "Are you able to get an erection with Erecaid?" (r_s = .32, p < .05) and "Does your erection with Erecaid enable (vaginal) intercourse?" (r_s = .30, p < .05) (Table 2). Open-ended comments indicate that two older patients unable to obtain an erection with the device needed further support for device use, with one patient reporting difficulty obtaining a seal for proper suction and the other wanting another physical demonstration of how to use the device. Older patients unable to have vaginal intercourse with the device include the two patients with device difficulties, two patients who used the device only once, and no comments from the fifth patient. There were no age differences in any of the other variables – neither adequacy/helpfulness of the educational and training materials nor for problems using the device or sexual satisfaction (r_s −0.24 to 0.24, ps > .05).

Female partners

Female partners (n = 41) who responded to questions about the device were 60.21 years old on average (SD = 11.2; min-max age = 21–78). Of them, 61.0% (n = 25) reported watching the videotape training of device use, and 33.3% (n = 13 out of 39 responses) assisted the patient with the device. One-quarter of partners reported the device was used for foreplay (25.6%; n = 10 of 39 responses). Overall, female partners rated sex as better with the device (83.8%; n = 31 of 37 responses). On open-ended responses (see Table 3), some female partners identified physical discomfort and reduced spontaneity as reasons for the device negatively affecting sexual activity; however, 92.1% of the

Table 2. Treatment outcomes in middle-aged (<65 years old) and older patients (≥65 years old).

	Middle-Aged (*n*= 24)		Older Adult (*n*= 33)	
Outcome	Yes *n* (%)	No *n* (%)	Yes *n* (%)	No *n (%)*
Able to obtain an erection*	24 (100.0)	0 (0.0)	29 (93.5)	2 (6.5)
Enables intercourse*	23 (100.0)	0 (0.0)	26 (83.9)	5 (16.1)
Sex better with the device	19 (90.5)	2 (9.5)	27 (93.1)	2 (6.9)
Recommend device to others	23 (100.0)	0 (0.0)	33 (100.0)	0 (0.0)
Physical discomfort with device	8 (33.3)	16 (66.7)	8 (25.0)	24 (75.0)
Psychological discomfort with device	2 (8.3)	22 (91.7)	3 (9.7)	28 (90.3)
Problems putting bands on cylinder	3 (12.5)	21 (87.5)	7 (22.6)	24 (77.4)
Problems sliding bands on penis	3 (12.5)	21 (87.5)	4 (12.5)	28 (87.5)
Problems sliding bands off post-intercourse	5(20.8)	19 (79.2)	4 (12.9)	27 (87.1)
Skin bruising from bands	2 (8.3)	22 (91,7)	2 (6.3)	30 (93.8)
Skin Sores from bands	1 (4.3)	22 (95.7)	0 (0.00)	33 (100.0)
Problems with bands breaking	2 (8.3)	22 (91.7)	1 (3.0)	32 (97.0)
Written instructions adequate	24 (100.0)	0 (0.0)	30 (96.8)	1 (3.2)
Received a videotape demonstration	24 (100.0)	0 (0.0)	28 (84.8)	5 (15.2)
Videotape demonstration helpful	24 (100.0)	0 (0.0)	27 (93.1)	2 (6.9)
Device used in foreplay	9 (39.1)	14 (60.9)	12 (38.7)	19 (61.3)
Partner assistance with device	9 (39.1)	14 (60.9)	8 (25.0)	24 (75.0)
Satisfaction with sexual relationship now[1]	19 (90.5)	2 (9.5)	27 (96.4)	1 (3.6)

All ratings are "yes/no' except for "Number of pumps with device before erection occurs" (continuous) and "Length of time (months) using the device" (categorical: 1-month, 2-month, 3-month, 4-month, 5-month, or 6–12 months). The term "intercourse" refers to vaginal intercourse. [1]The item "How satisfying is your sexual relationship now?" used ordinal response choices on a Likert-type scale for the analyses, but are summarized in this table as Yes ("somewhat satisfactory", "satisfactory", "very satisfactory") or No ("not satisfactory"). Missing information or non-responses for total *n*s <24 for middle-aged adults and <33 for older adults. *Older age was significantly associated with decreased ability on these two items (*p*s <.05).

Table 3. Example quotes on types of challenges and benefits of device.

	Patient Sample Quotes	Partner Sample Quotes
Specific Challenges		
Physical Pain or Discomfort	"Aches afterwards" "Pumping too much a little bleeding (just once)" "Guess once I get used to the foreign pressure it'll be okay." "Foreskin sore a few days after intercourse" "Following orgasm, ejaculate does not discharge from penis until ring is removed" "Bruising on head of penis likely due to inadequate lubrication of device."	"Not used to intercourse for a long time. "Soreness. I use lubricant as suggested by you." "Made him too large. Uncomfortable [for her]."
Device Discomfort	"At first getting used to bands" "[Bands are] too tight " "Getting too close to the base of the penis and entangling it in the hair." "It would be better if cylinder was a bit larger in diameter, would allow the penis to get full length with less friction." "Foreskin strained due to improper placement of the band"	"Need more practice"
Psychological Discomfort or Other	"It is not part of the foreplay routine. It probably isn't being used to full capacity." "Inconvenience of having to take 'time out' for [the device]." "Frustration" "Artificial. Mechanical." "Reduce spontaneity, may destroy the moment."	"He is uncomfortable using any artificial aids and will go into the other room to use the [device]." "At times it takes away from spontaneity, lessening the emotional excitement." "If the penis is very large and the band is too tight – there could be a slight discomfort and perhaps damage to the penis."
Benefits		
Self-Esteem	"Now that I can get an erection, it makes you want to do it more and you're never disappointed. It just makes life a lot better." "It is a great psychological uplift for me. I consider my [sexual functioning] better now than when I was able to function normally." "Elimination of fear of failure." "For men like myself, that had sexual problems in the past, … [the device] is God's gift to a man that enjoys sex with a woman. The [device made] a man feel like a man again. Thank you."	"Better for him, therefore psychologically better for me." "Sex is better insofar as it gives my partner more confidence. I personally was sexually satisfied before [the device] as I am satisfied with the use of [the device]." "Eliminates anxiety."
Ability to Obtain and Maintain Erections	"Able to maintain a firm erection from start to finish." "I can get and keep an erection and I could not before [the device]." "Harder erections." "Able to penetrate better."	"Not yet a satisfactory erection, but more interest in sex." "The erection appears to last longer therefore making love making more pleasurable." "Much better, larger, firmer" "The penis now has a full erection."

(*Continued*)

Table 3. (Continued).

	Patient Sample Quotes	Partner Sample Quotes
Other Positive Outcomes	"More sexual interest but no intercourse yet." "It has improved my sex life, which is better than before I start using [the device]. I would recommend [it] to all who has a sex problem with their mate." "After not having any [intercourse] since [many years], any sex is great." "Sex lasts longer than usual." "A big advantage over an implant [based on] cost, and … non-invasive." "My partners (I have two) are eager to participate in the pumping and are stimulated by the visual effect of my penis becoming erect." "I had orgasms."	"Overall [it] is a workable, satisfactory, and excellent device for [couples]… without or with a minimum amount of hang-ups regarding their own sexuality. Then and only at this point will the [device] function properly." "The [device] has brought us back from very little sexual thinking or contact to more thinking and contact. We are working toward intercourse again." "Sex is now possible" "Sex lasts longer."

partners (n= 35 of 38 responses) reported no physical discomfort from the bands. Benefits reported by female partners included improved confidence, interest, and satisfaction, reduced anxiety, the device making intercourse possible, and the ability to engage in sexual activity longer.

Reasons for not having a questionnaire completed by a female partner were not recorded, but include a) not having a female partner, b) the partner not attending the appointment, or c) possibly that the partner attended and declined, although this information was not coded. Male patients who had a female partner attend and complete a questionnaire, compared to those who did not, were significantly less likely to have had a video demonstration of device use, $t(40) = -2.36$, $p < .05$ and significantly less likely to endorse that sex was better with the device $t(38) = -2.08$, $p < .05$ (Levene's test for equality of variances was significant for both t-tests, thus equal variances not assumed). No other items of the semi-structured interview were significantly different between male patients who had a female partner attend the appointment and complete a questionnaire and those who did not.

Discussion

Overall, veteran patients described positive outcomes and satisfaction with the vacuum constriction pump device for treating their ED after being assessed by and prepared for device use through multimodal education and training by an interdisciplinary treatment team. While some patients and partners reported physical and psychological discomfort, as well as some difficulty using the device, many patients reported an ability to obtain erection with the device, improvement in vaginal intercourse with the device, and that they would recommend the device to others. Open-ended comments among male patients and female partners suggest that the benefits of the device extended beyond erectile functioning to include enhanced sexual well-being based on increased sexual confidence and relationship intimacy. Patient age was associated with outcomes, with older patients slightly more likely to report an inability to obtain an erection or to engage in vaginal intercourse with the device compared with younger patients. This age-associated finding is important considering older patients were more likely than younger patients to be prescribed this device as reported in a previous study from our clinic (Beaudreau, Rideaux, & Zeiss, 2011). The potentially reduced effectiveness of the vacuum constriction device in older patients could signal the need for some older patients to receive additional follow-up training to troubleshoot issues and to receive live corrective practice with the device. Regardless of age, most patients did not use the device for "foreplay activities." The ability to obtain an erection to engage in vaginal intercourse is a fairly narrow outcome insofar as potential uses for the device. Discussing with male patients the possibility of expanding their use of the device for other partner sexual activities, such as oral or manual stimulation, or manual self-stimulation or for anal intercourse with male or female partners could also be explored as an outcome and potential use for the device.

While most female partners of patients in the study said "yes" to the statement "sex is better"

with the device, a minority of patients (16%; $n = 6$ out of 37 responses) indicated it was not. Reasons for female partner dissatisfaction included pain or discomfort due to the size of the erection despite using lubricants as directed by the team. Couples' expectations regarding the device should be fully discussed and planned for, including how postmenopausal experiences, such thinning of the vaginal walls and burning sensations during intercourse for women might impact resuming vaginal intercourse. Given that the device was less often used for foreplay per partner reports (25%), patients and their partners should discuss the potential for sexual intimacy with non-intercourse activities if intercourse is not possible due to the percent erection obtained, engorgement of the penis being too large for comfortable intercourse by the partner, or due to partner's concerns about intercourse due to postmenopausal changes.

Our training was delivered in the context of an interdisciplinary team that included medicine and psychology. Future studies on implementation of the device in clinic could examine whether behavioral and mental health care is critical to patients' satisfaction with and uptake of the device. Specifically, it is hypothesized that the presence of psychology on the team increases opportunities to address complex psychological and relational issues impeding treatment implementation. Additionally, psychology staff provide follow-up for patients, which may include intensive psychotherapy, and can be done without the need for referrals to outside mental health providers. While most patients found the training useful, future studies of the device could examine moderating variables of patients for whom training in the device is useful versus less useful. A subset of patients reported the artificiality of the device and reduced spontaneity as hindering device usefulness. Psychoeducation to address those beliefs during the training session could be helpful for some patients and acknowledging that greater practice with the device could reduce the novelty of having a foreign object as part of sexual activities.

The accessibility and affordability of these devices in the U.S. extend beyond VA clinic settings. Older adults can be prescribed these devices by their primary care providers and covered (80%) by Medicare if the underlying cause of erectile dysfunction is medical (U.S. Centers of Medicare & Medicaid Services, 2020). Medical causes at least partially underlie ED in most patients seen in similar VA clinics (Beaudreau, Litz, & Kaufman, 2000). Given device accessibility, and our findings that it enabled erectile functioning in most patients, primary care settings should consider training nurses and behavioral health staff in this noninvasive, nonmedical option.

Limitations include the small sample size, though for the purpose of a qualitative analysis the sample was sufficient to reach saturation in the information learned about patient satisfaction. Privacy concerns or discomfort with discussing sexual issues could have influenced responses to questions among male patients and their female partners, although this concern was likely minimized due to having previous contacts with the clinic leading up to their appointment for device training. Selection bias in completing the interview was minimal because it was delivered as part of the patient's care, thus completion rates would have been high with minimal refusals to participate. Nevertheless, older adults who elected to receive the device could differ in important ways terms of their sexual health, attitudes, and functions compared with those who did not elect to receive this treatment.

Additionally, while the inclusion of female partners was informative, evaluation results are limited to heterosexual couples. Because clinic data were collected prior to the landmark Don't Ask, Don't Tell Repeal Act of 2010, patients who identified as gay might not have shared that information with their providers in a VA setting. Future investigations of satisfaction with the device among middle-aged and older gay or transgender patients, who are critically understudied, would be informative (Beaudreau, Gallagher-Thompson, & Pachana, 2019), as would studies of the potential for device use in patients with cognitive impairment and more in-depth questions about device use in postmenopausal partners.

Results from this program evaluation may be useful to inform clinicians regarding their decision to prescribe the device to patients with erectile dysfunction. Because many older patients may be reluctant to add another medication to their

regimen, and the device option has few negative side effects, psychoeducation about this option earlier in treatment and not after frontline treatment is tried, could be useful. Overall, this evaluation of patient satisfaction suggests that vacuum constriction devices can be highly effective in treating ED and improving sexual relationships, especially when patients are assessed by psychology within a primary care clinic team and are provided with adequate training in device use. Effectively treating ED may have positive effects on the sexual health functioning of male patients, particularly older adults for whom ED is a common experience.

Clinical implications

- The vacuum constriction device effectively treated erectile dysfunction in male Veterans of all ages.
- Female partners reported an increased ability to engage in sexual activities with male partners who used the device.
- Male patients primarily used the device for vaginal intercourse. Expanding device use to other sexual activities could be beneficial.
- Future studies should compare effectiveness of device use of our model of team care, which includes psychology, with other care models.

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