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Internet-Based Treatment for Genito-Pelvic Pain/ Penetration Disorder: A Case Report

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Keywords
Genito-pelvic pain/penetration disorder · Sexual dysfunction · Cognitive-behavioral therapy

Summary
Background: Difficulties in having sexual intercourse, despite the explicit desire to do so, can lead to high disease burden for women with genito-pelvic pain/penetration disorder (GPPPD). Effective treatment is limited, and only few women actually seek help, often due to feelings of shame. Internet interventions provide anonymous, low-threshold access to specialized treatment, independent of time and place. This study presents the therapy manual of a newly developed guided internet intervention for GPPPD (Paivina-Care) and discloses acceptance, satisfaction, and usefulness by exemplifying with a case report. **Methods:** The rationale and treatment manual are presented. The case report follows the case reporting (CARE) guidelines and presents a patient with successful treatment course as well as qualitative and quantitative treatment outcomes. **Results:** A cognitive-behavioral program based on pain management and sex therapy including the partner can be a successful approach to treat GPPPD showing high acceptance and treatment satisfaction. It is currently being evaluated in a randomized-controlled trial of 200 women with GPPPD. **Conclusion:** This Internet intervention offers women with GPPPD a flexible therapy of all symptom dimensions.

Schlüsselwörter
Genito-Pelvine Schmerz-Penetrationsstörung · Sexuelle Funktionsstörung · Kognitive Verhaltenstherapie

Zusammenfassung
Hintergrund: Schwierigkeiten, Geschlechtsverkehr zu haben trotz bestehenden Wunsches, stellen für Frauen mit Genito-Pelviner Schmerz-Penetrationsstörung (GPSPS) eine große Belastung dar. Die Verfügbarkeit spezifischer Therapieangebote für sexuelle Funktionsstörungen bei Frauen ist begrenzt und existierende Therapiemöglichkeiten werden oftmals aus Schamgefühlen nicht in Anspruch genommen. Internetbasierte Behandlungsansätze können einen niedrigschwelligen, anonymen, zeit- und ortsunabhängigen spezialisierten Therapiezugang ermöglichen. Bislang liegt noch kein wissenschaftlich evaluiertes Programm für die Behandlung von GPSPS vor. Das Ziel der vorliegenden Arbeit ist es deshalb, den Therapieleitfaden eines neu entwickelten internetbasierten, begleiteten Behandlungsprogramms für GPSPS (Paivina-Care) vorzustellen sowie exemplarisch die Akzeptanz und Zufriedenheit und den subjektiven Nutzen anhand eines Fallberichtes darzustellen. **Methodik:** Das Rational und der Therapieleitfaden des Behandlungsprogramms werden vorgestellt. Die Falldarstellung nach der Case Reporting (CARE)-Leitlinie präsentiert eine Patientin mit erfolgreichem Behandlungsverlauf sowie qualitative und quantitative Erfolgsmaße. **Ergebnisse:** Die Kasuistik zeigt, dass das kognitiv-verhaltenstherapeutische Programm basierend auf Schmerz- und Sexualtherapie unter Einbezug des Partners die GPSPS bei der vorgestellten Patientin erfolgreich behandeln konnte und mit hoher Therapiezufriedenheit Schmerzen und sexualitätsbezogene Ängste und negative Kognitionen reduzieren sowie Geschlechtsverkehr ermöglichen konnte. Derzeit erfolgt eine randomisiert-kontrollierte Wirksamkeitsuntersuchung an 200 Frauen mit GPSPS. **Schlussfolgerung:** Das internetbasierte Behandlungsprogramm bietet Frauen mit GPSPS eine flexible Behandlungsmöglichkeit, die sie anonym, zeit- und ortsunabhängig nutzen können.

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Introduction

For women with Genito-Pelvic Pain-Penetration Disorder (GPPPD), difficulties with or the inability to have intercourse, despite the desire to do so, constitute a major burden and impair their quality of life [Arnold et al., 2006]. Despite the high level of distress, there are only a few specialized treatment options for sexual dysfunctions in general and pain-related penetration disorders in particular, compared to other psychosomatic disorders [Moreira et al., 2005]. Moreover, feelings of shame and guilt about sexual problems are often a major barrier to seeking therapy [Nguyen et al., 2013]. Feelings of shame and a lack of knowledge about the disorder often also inhibit practitioners from exploring and treating sexual dysfunctions during routine examinations [Reinecke et al., 2006].

The GPPPD diagnosis came about during the development of the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and combines the revised diagnoses of dyspareunia and vaginismus. The consolidation of the two disorders into the GPPPD diagnosis was a result of the large overlap of their symptom profiles and the difficulty of making a differential diagnosis [Carvalho et al., 2012].

The GPPPD is characterized in the DSM-5 by (1) difficulty in vaginal penetration during intercourse, (2) vulvovaginal or pelvic pain during or in attempts at vaginal penetration, (3) fear of vaginal pain or vaginal penetration, or (4) spasm or tension of the pelvic floor muscles during attempted vaginal penetration [American Psychiatric Association, 2013]. To reach a diagnosis, at least one of the above core symptoms must exist for at least 6 months and cause clinically significant suffering. GPPPD can be classified as lifelong (existing since the beginning of sexual activity), or acquired (if the symptoms have occurred after a period of sexual functionality).

The prevalence of GPPPD has not yet been empirically studied due to the novelty of the DSM-5 diagnosis. Depending on, e.g., different diagnostic criteria, prevalence in the general population varies between 3.0 and 21.1% for dyspareunia and between 0.4 and 6.6% for vaginismus [Latthe et al., 2006; Christensen et al., 2011; Peixoto and Nobre, 2015].

GPPPD and associated conditions such as the vaginal pain disorders vulvodynia and vestibulodynia have a multitude of negative effects on physical and mental health as well as on a couple's relationship. There are often other sexual dysfunctions associated with GPPPD, such as decreased sexual desire and arousal, as well as reduced sexual activity [Farmer and Meston, 2007]. Often gynecological examinations and the use of tampons are not possible. Many affected women also report an impaired body image and self-image as a woman [Pazmany et al., 2013]. Depression and anxiety disorders can occur as comorbid disorders [Khandker et al., 2011].

The etiology of GPPPD is multifactorial and can be conceptualized in a biopsychosocial model that considers physiological, psychological, partnership, and cultural factors. The chronification of GPPPD symptoms can be explained by the fear-avoidance model for chronic pain [Vlaeyen and Linton, 2000], in which especially negative penetration-specific cognitions (e.g., pain catastrophizing, beliefs of genital incompatibility), hypervigilance, negative emotions such as anxiety in penetration-related situations as well as avoidance of vaginal insertion and sexual intimacy contribute to the maintenance of the symptoms [Cherner and Reissing, 2013].

Primary goals for behavioral therapeutic interventions can be derived from the fear-avoidance model: psychoeducation, dealing with dysfunctional cognitions, pain management, gradual vaginal exposure, relaxation exercises, and exercises for couples such as Sensate Focus. Although the individual therapy components are an integral part of the few existing treatment options for female sexual dysfunction, there is so far only a small number of high-quality studies evaluating their efficacy. Psychotherapeutic formats for the treatment of dyspareunia and vaginismus include therapist-guided vaginal insertion exercises, cognitive-behavioral group therapy, and guided bibliotherapeutic self-help [Van Lankveld et al., 2006; Bergeron et al., 2016; Brotto et al., 2015b; Günzler and Berner, 2012; Lester et al., 2015]. Study results show a significant increase in vaginal penetration ability and sexual function, as well as a reduced vaginal pain [Ter Kuile et al., 2009].

Face-to-face treatment options, however, have the disadvantage of low coverage and time constraints [Andrade et al., 2014]. In addition, feelings of shame on the part of the patient in many cases discourage use of therapy. Internet-based approaches have the advantages in the treatment of sexual dysfunction that they (1) are available irrespective of time and place and thus have a higher coverage range, (2) are anonymous, (3) can reach affected women at an earlier stage of symptoms because of lower threshold in using them, (4) provide an opportunity to women who would otherwise not seek treatment, and (5) allow patients to work at their own pace. Internet-based therapies have proven effective in the treatment of various sexual dysfunctions in women and men [Andersson et al., 2011].

So far, there has not yet been any scientifically evaluated treatment program for GPPPD. The aim of the present work is therefore to introduce the therapeutic manual of a newly developed Internet-based treatment program for GPPPD. We present a detailed case report of a patient who successfully completed the program, as an example of the acceptance of and satisfaction with the intervention and its subjective benefit.

Treatment Guidelines

Therapy Format

The GPPPD treatment program was designed on the basis of previous research results on vaginismus and dyspareunia and includes elements of cognitive-behavioral pain and sex therapy. The previous version of the program for women with vaginismus was evaluated in a pilot study, on which the Internet-based treatment program for GPPPD presented here is based on [Zarski et al., 2017]. The treatment is conducted in an individual setting with the partner's involvement. Targeted interventions include psychoedu-

Table 1. Module and therapy components of the treatment program for GPPPD

Module		Therapy components
1	Good to Know	Psychoeducation I
		Promotion of treatment adherence
		Inclusion of partner in the training
2	Getting out of the GPPPD Vicious Circle	Psychoeducation II
		Cognitive restructuring
		Nonjudgmental awareness
3	Loosening Up and First Insertion	Muscular and breathing relaxation; pelvic floor relaxation
		Attention-focusing for pain management
		Gradual vaginal insertion with fingers
4	Self-Discovery	Body exposure and genital self-exploration
5	Vaginal Training I	Promoting sexual desire and arousal
		Gradual vaginal insertion with dilators I
		Gradual vaginal insertion of dilators by the partner
		Sensate Focus I
6	Vaginal Training II	Gradual vaginal insertion with dilators II
		Gradual vaginal insertion of dilators by the partner II
		Sensate Focus II
7	Sexual Intercourse	Exercises with inserting the partner's penis and preparation for sexual intercourse
8	Reflection and Future Prospects	Future plan and relapse prevention
9	Booster	Reactivation of learned treatment content

cation, cognitive restructuring, nonjudgmental awareness, muscle and breathing relaxation, pelvic floor relaxation, attention focusing for pain management, body exposure and genital self-exploration, promotion of sexual pleasure and arousal, gradual exposure with fingers and vaginal dilators, Sensate Focus, exercises with insertion of the partner's penis, preparation for sexual intercourse, and relapse prevention.

The individual treatment components are distributed over a total of 8 modules, which the patients go through in a designated sequence. Four weeks after completion of the modules, there is a booster session. The time required for 1 module is between 45 and 60 min. It is recommended that patients complete 1 module per week.

The modules consist of text-based information, testimonials from sample patients, as well as interactive elements such as daily exercises, written entries, quizzes, MP3 audio files, videos, and downloadable worksheets. The program is adaptive, so that the content can be tailored to the individual needs of the patients by various response and selection options. Patients can also use an online diary with a calendar function to rate the progress of their therapy with a graphic visualization of the therapy progress and to document helpful strategies. A smartphone app can also be used to make diary entries in relevant everyday situations. The daily exercises are a key part of the program, to encourage the direct application of newly learned strategies.

Psychological Guidance

As the program proceeds, the patients receive guidance from an eCoach, who gives written feedback on completed modules within 48 h. The guidance focuses on validation of the success and progress made in the program, patients' motivation to perform the exercises regularly, and support for them by dealing with emerging difficulties and answering questions. The eCoach also reminds patients to complete the module if this has not been done within 7 days. Individual schedules can be adapted if necessary.

The eCoaches are female psychology students who have received comprehensive training on the disorder, treatment of GPPPD, use of the online platform, and giving manual-based written feedback to the patients. They were continuously supervised by a psychological therapist in training and a licensed psychological therapist.

Therapy Components

Module 1: Good to Know

Psychoeducation I

The program begins with comprehensive psychoeducation on the disorder, on the prevalence, and on the etiology and risk factor model of GPPPD. A quiz gives patients the opportunity to playfully grapple with various GPPPD myths (e.g., 'The penis can get stuck in the vagina') and to write down the individual history of their GPPPD. Table 1 gives an overview of the modules and therapy components of the treatment program for GPPPD.

Promotion of Therapy Adherence and Self-Efficacy Expectations

In order to motivate themselves for the therapy and exercises, the patients formulate their personal motivations for treatment as well as their individual therapy goals, which are repeatedly revisited as the program proceeds. The importance of regular practice in daily life is highlighted as the most important therapeutic mecha-

nism of change. To support the patients in this regard, they can integrate the training times into their online weekly schedule and come up with ideas for coping with possible obstacles and setbacks in the performance of their exercises. The patients are also introduced to the concept of effective self-support and giving oneself rewards.

Inclusion of the Partner

At the end of the first module, the patients are encouraged to talk with their partner about the GPPPD therapy, the partner's role in the treatment, and both of their emotional needs. Tips for good communication between partners are introduced.

Module 2: Getting Out of the GPPPD Vicious Circle

Psychoeducation II

In the second psychoeducation module, the patients enlarge their individual GPPPD explanatory model with the fear-avoidance model. In a self-selected GPPPD-relevant situation, they can identify and note situation-specific thoughts, feelings, body reactions, and behavior patterns, and work out the connections among them. The fear-avoidance model is revisited repeatedly as a rationale for the other treatment components.

Cognitive Restructuring

Following up on the fear-avoidance model, the patients are instructed during the cognitive restructuring to observe their thoughts in a 'thought protocol' and to use cognitive techniques such as change in perspective or reality testing. They then formulate helpful alternative thoughts, to change their view of vaginal insertion. Finally, strategies are introduced for how to remember these helpful thoughts in daily life (e.g., with a note on the bedside table). As homework, the patients practice applying the thought protocol and the helpful thoughts in sexual as well as non-sexual situations.

Nonjudgmental Awareness

The method of nonjudgmental awareness is introduced to learn how to deal with automatic negative thoughts and feelings [Brotto et al., 2015a]. Here, the patients are taught to observe their thoughts and feelings without evaluating or suppressing them. Nonjudgmental awareness is practiced in both sexual and non-sexual situations.

Module 3: Loosening Up and First Insertion

Muscular and Breathing Relaxation

Using a progressive muscle relaxation (PMR) audio file in combination with breathing relaxation, the patients learn a targeted full-body relaxation method [Jacobson, 1938]. First they practice the PMR in a long version, later in a short version. The patients then train with a video tutorial about the awareness and relaxation of the pelvic floor muscles, based on the principle of muscle-contraction and -relaxation.

Attention-Focusing for Pain Management

A video first explains the functionality and multifactorial development of pain and the distinction between acute and chronic pain. Patients can then identify individual factors that affect their own pain. In attention-focusing, they are instructed with an audio file to first locate their genito-pelvic pain center in their imagination, to visualize the pain, and to describe it with images. Then, defocusing of the pain is practiced by directing the attention to, for example, ambient noise, positive experiences, and breathing, and to a change in the quality of the pain, guided by transformation of the pain image (e.g., a change in the shape, color, and temperature of the pain image) [Dillworth and Jensen, 2010].

Gradual Vaginal Insertion with Fingers

The vaginal insertion exercises are based on the principle of gradual exposure and are performed in combination with muscle, respiratory, and pelvic floor relaxation. The vaginal insertion begins with the self-insertion of 1 and 2 fingers. The patients use downloadable step-by-step instructions to strengthen the experience of being in control and the ability to be an active participant during vaginal insertion, and are encouraged to develop their own rituals to prepare for the exercise (e.g., to create a pleasant environment, to turn off potential interfering variables such as mobile phones).

Module 4: Self-Discovery

Body Exposure and Genital Self-Exploration

Body exposure and genital self-exploration begins with illustration and explanation of the female genitalia, the anatomy of the pelvic floor, and physiological processes during sexual arousal and intercourse. In the subsequent mirror exercise, patients view and touch their vagina in front of a mirror using nonjudgmental awareness. In further short exercises to strengthen positive body perception and self-esteem, patients deliberately focus on their body parts that they like, identify their own strengths and successes, and develop strategies for self-care.

Sensate Focus I

Sensate Focus exercises promote mutual sensory body awareness between the patient and partner, in order to become more familiar with her own and her partner's bodies, including erogenous zones [Masters and Johnson, 1986]. At the beginning, the rules of the step-by-step procedure are presented, to reduce pressure to perform and anxiety in sexual intimacy. The partners touch and massage each other (1) first fully clothed and nongenitally, then in underwear, (2) with genital touching, but without the goal of causing sexual arousal, and (3) with genital touching, which may also lead to sexual arousal. Both partners take both the active and passive roles in touching during the exercises. Couples are also encouraged to share their feelings and sensations with one another, in order to experience what gives them and their partner positive feelings and pleasure.

Module 5: Vaginal Training I

Promoting Sexual Desire and Arousal

To promote sexual desire and arousal, sexual self-stimulation is addressed in the form of masturbation techniques, which can be tried out as homework during the vaginal insertion exercises.

Gradual Vaginal Insertion with Dilators I

Gradual exposure is used with the self-insertion of dilators – a medical device to provide systematic desensitization for controlled vaginal insertion – with guided use of relaxation techniques. The dilators are of increasing size, starting with the smallest and ending with the largest dilator, which is the size of an average penis. It is recommended that patients shift to the next larger dilator if they have repeatedly inserted the previous size without any problem. A step-by-step guide also includes ways to prepare for the exercises, different sitting positions, and tips for dealing with difficulties. In addition, patients are offered a long-term exercise in which they keep the dilator in the vagina for up to 1 h, to increase the habituation effect.

Graduated Vaginal Insertion of Dilators by the Partner

The insertion exercises with the partner are likewise built up step-by-step and begin with the insertion by the partner of (1) 1 and 2 fingers, followed by (2) dilators of increasing size, while the woman guides the partner's hand.

Module 6: Vaginal Training II

At this point in the program, patients can choose to continue practicing with the smaller dilators or to move to insertion of the largest dilator. Vaginal insertion and Sensate Focus are performed with the partner. In addition, specific problem-solving steps are presented for difficulties with the exercises (e.g., lack of time, insertion problems) on the basis of various coping strategies (e.g., scheduling exercise times in an appointment calendar, changing the position during insertion).

Module 7: Sexual Intercourse

Inserting the Partner's Penis

The partner's penis insertion exercises include (1) touching the vagina with the erect penis without penetration, (2) inserting the erect penis without the partner moving, and (3) moving the inserted penis inside the vagina.

Module 8: Reflection and Future Prospects

In the final module, the patients evaluate the effectiveness of the individual therapy modules, reflect on their training goals, and can set themselves new goals for the next 4 weeks. In the process, they write a letter to themselves about their wishes regarding their (sexual) lives. With the aim of preventing relapse, the patients also identify early warning signs and relapse strategies.

Booster Module

Four weeks after completing the eighth module, the patients can, with reference to their letter to themselves, reflect on the goals they achieved and take stock of things. Finally, they have the opportunity to formulate new goals for the maintenance of a symptom-free state, for coping with residual symptoms, or for the further development of their sexual lives.

Design of the Case Report

The treatment program is currently being evaluated in a randomized controlled trial with a waitlist control group of 200 patients with GPPPD (approved by the Ethics Committee of the University of Erlangen-Nürnberg, No. 324_15B; registered in the German Register of Clinical Studies: DRKS00010228). The study's inclusion criteria are: (1) no sexual intercourse in the last 6 months because of GPPPD (Primary Endpoint Questionnaire (PEQ) Item 7 ≤ 1) [Van Lankveld et al., 2006], (2) age ≥ 18 years, (3) exclusion of medically treatable causes of GPPPD, (4) heterosexual partnership/exercise partner, (5) Internet access, (6) sufficient knowledge of German, and (7) written informed consent. The exclusion criteria are: (1) psychosis or dissociative symptoms, (2) current or past post-traumatic stress disorder, (3) current substance dependence, (4) moderate or severe depression or bipolar disorder assessed by telephone with the Structured Clinical Interview for DSM-IV (SKID-I) [Wittchen et al., 1997], and (5) currently in treatment for GPPPD.

Treatment effectiveness and satisfaction are illustrated by a case report of a patient with a successful course of treatment. The patient's written entries in the online modules and her statements in a qualitative telephone interview after the end of the therapy are reported. To evaluate treatment success, acceptance, and satisfaction, we assessed the patient's quantitative data from the online surveys before and after completion of the treatment, as well as the qualitative telephone interview. The case report follows the Case Reporting (CARE) guidelines [Gagnier et al., 2013]. The patient gave her written consent for participation in the study, data collection and evaluation, as well as preparation and publication of the case report.

Quantitative measures of success: The PEQ was used to assess coital and noncoital penetration ability (7 items, 4-level Likert scale). The Fear of Sexuality Questionnaire (FSQ) assesses the fear of sexual intercourse and noncoital sexual activity [Ter Kuile et al., 2013]. The Vaginal Penetration Cognition Questionnaire (VPCQ, 22 items, 7-point scale) assesses positive and negative cognitions about vaginal penetration [Klaassen and Ter Kuile, 2009]. The Female Sexual Function Index (FSFI, 19 items, 7-point scale) assesses the level of sexual functioning [Rosen et al., 2000], and the 'Partnerschaftsfragebogen' (Partnership Questionnaire) (PFB-K, 9 items, 4-point scale, 'Happiness Items', 6-point scale) assesses the quality of the partnership and satisfaction with it [Kliem et al., 2012]. Potential negative effects were measured using the Inventory for the Assessment of Negative Effects in Psychotherapy (INEP, 15 items, 7-point and 4-point Likert scales) [Ladwig et al., 2014].

Case Report

Prehistory

Mrs. Apfel (name changed) was 29 years old when she participated in the treatment program. According to the data she submitted, the patient had a polytechnic degree, was married, and had been in a relationship with her partner for 11 years. She said she had been suffering from GPPPD symptoms for 12 years, and sexual intercourse has never been possible. She stated that medically treatable causes of GPPPD had been gynecologically ruled out. No abuse was reported. Mrs. Apfel said she had already completed a course of outpatient psychotherapy, which did not help her GPPPD symptoms. As her reason for participating in the program, she said that she found an online option attractive.

Diagnostics

Mrs. Apfel met the DSM-5 criteria for GPPPD and reported that she and her partner were sexually active, but had not tried to insert her partner's penis in the last 6 months due to burning and pulling pain, along with severe anxiety at attempted vaginal penetration. She said that she also found it difficult to relinquish control in sexual situations. There were no comorbid mental disorders. The patient considered her marriage to be a very happy one. She described her partner as very supportive and stated that she could experience sexual intimacy and pleasure with him. Her partner did not report any sexual dysfunction.

Description of the Treatment

The patient reported being able to 'recognize herself well' in the psychoeducational information provided and 'no longer feeling alone' in the symptoms she experiences. Referring to factors influencing her GPPPD, Mrs. Apfel mentioned being 'an anxious type' and 'always thinking a lot', difficulties in inserting tampons at the first onset of menstruation and the resulting 'fear of failing', the lack of any confidante during puberty with whom to discuss sexual matters, as well as painful and pejorative experiences during gynecological examinations.

In the course of the treatment, Mrs. Apfel profited greatly from formulating specific and small-step treatment goals and articulating her motives for therapy and change, in order to motivate herself and 'get into' the program. The patient defined her treatment goals as having sexual intercourse with her partner, reducing her anxiety about pain, dealing with negative penetration-specific thoughts, and 'not to experience it as a personal failure' if intercourse is not possible. In the long term, she would like to become pregnant naturally. She formulated as a motivational phrase: 'I want to feel freer and more relaxed and not have to make any sacrifices'. At the beginning of the treatment, Mrs. Apfel devised specific strategies for regular practice, such as scheduling fixed exercise times, visualizing the usefulness of the exercises, and targeted rewards (e.g., to read in the hammock).

Mrs. Apfel chose a gynecological examination as an example situation for creating her individual disorder model. She reported the following thoughts about this situation: 'Will I be in pain?', 'It works with everyone else, just not with me', and 'Will something be embarrassing or unpleasant for me?' Her associated feelings are anxiety (intensity 7 out of 10), uncertainty (intensity 6 out of 10), and anger/frustration (intensity 5 out of 10). Her body reacts with cramps, a faster pulse rate, tachycardia, trembling, cold hands, and restlessness. She then tells her gynecologist that she 'does not want a vaginal exam'.

Afterwards, during her cognitive restructuring, Mrs. Apfel came up with the following helpful thoughts about vaginal insertion and intercourse: 'My body is made for it', 'Even if it hurts, I can deal with it, I have nothing to fear', and 'I can tell my partner at any time if I want something different, if it is a little too much for me'. She also reported having definitely less fear and more confidence. For pain management, the patient profited greatly from the cognitive restructuring, which had helped her 'not to classify the unknown as pain, but to simply evaluate it the first time as new and unknown'.

The relaxation of the pelvic floor also helped Mrs. Apfel, as she felt she was 'loosening up and opening up'. She said that the insertion of fingers had then become problem-free and pain-free. At the same time, however, she reported a feeling of tightness upon insertion and the concern that 'she could not imagine that something bigger would fit into her'. Body exposure and genital self-exploration, she said, 'helped her to become aware of her own anatomy and to discover herself'.

Later on, the patient reported that she is under stress at work, which prevents her from doing the vaginal training regularly. But she said it was also important 'not to berate herself and to be too self-critical and perfectionistic', since the exercises 'should remain encouraging and positive'. Mrs. Apfel then performed her already planned exercise strategies (specific scheduling, informing her partner about her planning for greater commitment, making herself acknowledge small successes). The feedback and reminders of the eCoach, she said, encouraged her to establish a continuing practice routine, as did the online diary with its graphic visualization of the exercise progress. By the end of the training, she no longer needed the exercise diary.

Mrs. Apfel said that the most important treatment component was the continuing vaginal training with different dilator sizes, which she had initially inserted alone and later with her partner, 'at her own pace'. The patient reported that she already had experience with dilator exercises, but because of difficulties in inserting the larger sizes, she had been 'a bit put off' and had 'given up'. She reported that during the vaginal training she succeeded in inserting the smaller dilators almost every day. According to her statements, 'fixed exercise structures and rituals', 'enough time and repose for practicing', and the step-by-step progression gave her 'a lot of security and control' so that she no longer felt 'powerless' about the GPPPD.

She also found the Sensate Focus exercises with her partner to be very positive, as it had been nice 'to deliberately take time for each other', to 'feel each other', and 'also to get to know each other again, even though we have been together for quite a long time'.

Before she began with the exercises for insertion of her partner's penis, Mrs. Apfel developed a number of positive self-instructions, such as, 'By now I know my body well, and I know that I am built in such a way that the penis can fit', 'I have practiced a lot with the vaginal training and also with my partner. I was able to achieve a sense of security, to reduce many of my fears'. Mrs. Apfel managed insertion of the penis without any problem in the first practice attempt, and she said that she found the transition from the dilators to the penis 'easy', contrary to her fears, because the penis is 'more flexible, more adaptable, and softer'. In order to consolidate her success, Mrs. Apfel stated that she is still practicing vaginal insertion on a regular basis, but also wants to build up flexibility and spontaneity in her sexual life with her partner.

Treatment Outcome

Mrs. Apfel completed the 8 therapy modules within 3 months and the booster session 4 weeks later. After completion, she stated as the PEQ primary outcome measure that she could successfully insert her partner's penis. There was also a significant pain reduction during intercourse on the scale value (SV) *pain* of the FSFI (SV_{pre} = 4.00, SV_{post} = 2.80, range 0–5). Dysfunctional pain-related cognitions such as 'I'm afraid that there's nothing I can do to change the pain of vaginal insertion' (SV_{pre} = 14, SV_{post} = 1, range 0–30), as well as fear of sexual intercourse (FSQ: SV_{pre} = 10, SV_{post} = 5, range 5–15), fear of loss of control (VPCQ: SV_{pre} = 6, SV_{post} = 0, range 0–24), and genital incompatibility with the partner (VPCQ: SV_{pre} = 9, SV_{post} = 1, range 0–12) were also almost completely eliminated, as shown by the VPCQ. Negative self-esteem cognitions ('I feel guilty if vaginal insertion is not possible') were also significantly reduced (VPCQ: SV_{pre} = 18, SV_{post} = 5, range 0–36). At the same time, positive thoughts about sexual intercourse increased (SV_{pre} = 18, SV_{post} = 23, range 0–30). Mrs. Apfel consistently rated her partnership quality and satisfaction as high on the Partnership Questionnaire (PFB-K: SV_{pre} = 24, SV_{post} = 27).

The patient required an average of 11 days to go through each of the 8 core modules (range 3–33 days) and made 12 diary entries. The contact with her eCoach comprised 8 sent and answered messages. Then, an individual schedule was made up, because the patient needed more time to work through modules 6–8 (range 11–33 days). No technical problems were reported.

The patient stated that she was very satisfied with the Internet-based GPPPD therapy (SV = 3.8, range 1–4) [Boß et al., 2016]. She rated the program as high in quality and said she would recommend it to a friend who needs similar help. She reported no negative treatment effects and stated that she felt better because of the program.

In the qualitative telephone interview, Mrs. Apfel said that the most important effective factors were her intensive involvement with herself and her body, as well as the regular performance of the step-by-step insertion exercises. She deemed it very helpful that the treatment was explicitly tailored to GPPPD. The regular training has given sexuality a higher priority in her life, she said, and as a result it has been somewhat less of a taboo. The latter has been shown, she said, in that she has told 2 friends about her symptoms.

Discussion and Outlook

The case evaluation showed that the treatment program can help women with lifelong GPPPD symptoms to achieve sexual intercourse and associated therapy goals such as pain management and coping with negative thoughts, and can result in high acceptance and treatment satisfaction.

The patient presented here benefited particularly from the small-steps approach to individual treatment, as well as the regular insertion exercises with dilators. In addition to the ability to have sexual intercourse, the quantitative evaluation showed a decrease in genito-pelvic pain, fear of sexual intercourse, and negative penetration-specific cognitions. These results suggest that the treatment program may be effective for all symptom dimensions of GPPPD. The program is characterized by its flexibility because it is independent of time and place, and the integration of the exercises in daily life, and its anonymity lowers the inhibition threshold to its use. Among the strengths of the program is that patients can go through the individual modules at their own pace and that the partner is actively involved in the exercises. The case study shows that patients should plan sufficient time to complete the program and that the time period should be flexible (e.g., individual adjustment of reminders to complete a module). It was also important to address how to handle potential setbacks, including by sufficiently validating partial successes and by promoting self-efficacy strategies for dealing with difficulties.

A limitation of this case history is the deliberate selection of the case report of a successful course of therapy. The therapeutic success measurements are also based on self-reports, without gynecological assessment of the symptoms. Before the start of treatment, however, it is essential to rule out medically treatable causes of GPPPD. Furthermore, in future studies a diagnostic instrument should be developed and validated for the assessment of GPPPD, to accurately capture all 4 principal symptoms, as well as the level of distress and impairment associated with the symptom profile. Future studies should also assess therapeutic success from the point of view of the partner.

The Internet-based program offers the opportunity for treatment of GPPPD with a guided self-help or within a blended care concept, in which contact with a therapist takes place either synchronously by video conference or in a real setting. From the case report presented here, it can be concluded that an Internet-based program for cognitive-behavioral pain and sex therapy with the involvement of the partner can be appropriate for the treatment of GPPPD. If these treatment effects are also shown in the randomized controlled efficacy study, the program may provide an evidence-based flexible and low-threshold treatment option for patients with GPPPD and contribute to more comprehensive care for those with sexual dysfunction disorders in Germany.

Note

Access to the treatment program and the treatment manual can be requested from Anna-Carlotta Zarski (anna-carlotta.zarski@fau.de).

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Disclosure Statement

M.B. and D.D.E. are shareholders in the GET.ON Institute, whose primary goal is the transfer of scientifically evaluated Internet-based interventions into the health-care system.

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