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CASE REPORT

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An online sensate focus application to treat sexual desire discrepancy in intimate relationships: contrasting case studies

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ABSTRACT

The present study provided an initial evaluation of an online, therapist-free sex therapy application for people struggling with sexual desire discrepancy in their relationship. In the mixed-methods case study, we provided an account of four users (two who improved and two who did not) who engaged in the intervention for eight weeks; the users answered weekly questions about their progress and completed an interview at the end of the study. We found that the intervention was very effective for some users with hope and confidence being related to higher improvement. Also seeing the problem as shared rather than one person's issue helped make improvements. Communication (or lack thereof) was an important contributor to both the problem and the progress. The application can be used as a standalone treatment for sexual desire discrepancy or in combination with a therapist.

LAY SUMMARY

The manuscript describes the experience of four individuals who used an online sex therapy app for eight weeks to help with mismatched sexual desire in their relationship. Having hope things would get better, seeing the problem as shared, and beginning to communicate about sex helped improve outcomes.

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Sexual desire discrepancy; sexual desire; sex therapy; sensate focus; couples

Sexual desire discrepancy (SDD; i.e. when one partner's level of sexual desire is higher or lower, or their preferences are different to that of their partner's) is a common difficulty for couples. Researchers estimate that between 25–30% of couples experience a problematic sexual desire discrepancy in relationships (Mitchell et al., 2013). SDD is also among the most common difficulties presented in couple's therapy (Ellison, 2002). A recent study found that sexual desire fluctuates periodically (M. J. Vowels et al., 2018). Other research has shown that desire ebbs and flows naturally, and therefore partners are unlikely to always be in sync with each other, making desire discrepancy inevitable and potentially problematic unless couples find a way to mitigate these instances in their relationship (Herbenick et al., 2014).

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However, despite its high prevalence, SDD has received relatively little attention in the academic literature (Girard, 2019). In fact, a recent position statement of the European Society for Sexual Medicine (Marieke et al., 2020) found that literature on SDD is sparse and making recommendations for treatment based on available evidence was not possible. The position statement especially highlighted the need for further research into the treatment of SDD.

An increasing body of literature shows that sexual desire difficulties tend to occur in a relationship context rather than on their own and sexual desire discrepancy predicts both relational (Mark, 2012; Mark & Murray, 2012; L. M. Vowels, 2021; L. M. Vowels & Mark, 2020) and individual (Lee et al., 2016) outcomes. For example, if Mary is not in a relationship with a partner and does not often experience sexual desire, she is unlikely to experience this as a problem. It may even be positive for her well-being as her desire for sexual experiences does not go unmet. However, if Mary is in a relationship with John who experiences a higher level of sexual desire, they may experience difficulties in the relationship. In this case, Mary may feel the pressure to engage in sex more often than she would like and John may feel rejected and unloved because he knows that Mary does not wish to have sex with him as often as he would like. Their sexual desire discrepancy is likely to have a negative impact on their sexual and relationship satisfaction unless they can successfully manage this discrepancy.

A small number of studies have examined ways in which couples can mitigate instances of sexual desire discrepancy in their relationships (Herbenick et al., 2014; L. M. Vowels & Mark, 2020). Herbenick et al. (2014) focused on a sample of women and found several strategies that the women used to manage sexual desire discrepancy in their relationship including having sex anyway, using toys, other physical closeness, or scheduling sex. Furthermore, in a mixed methods study, Vowels and Mark (2020) found that using partnered strategies (i.e. communication, spending time together, and having sex anyway) were better predictors of sexual and relationship satisfaction than using solitary strategies (i.e. doing nothing or masturbating alone). Additionally, other studies have provided suggestions on how to maintain sexual desire between partners. These include *working* on improving emotional intimacy (Brotto et al., 2009; Campbell & Rubin, 2012) and communication (Ferreira et al., 2014), and engaging in self-expanding activities together and avoiding monotony (Ferreira et al., 2014). These studies suggest that there are ways in which couples can mitigate instances of sexual desire discrepancy in their relationships and doing it with a partner is likely to be more beneficial than doing something alone.

Traditional sex therapy for sexual desire discrepancy

There are several treatments that clinicians have described to treat sexual desire discrepancy in couples. For example, Weiner and Avery-Clark (2017) described treating sexual desire discrepancy using sensate focus and Girard and Woolley (2017) recommended using sensate focus in combination with emotionally focused therapy. Sensate focus was originally developed by Masters and Johnson in the 1960s to help treat sexual dysfunctions (Weiner & Avery-Clark, 2014). Sensate focus comprises of a series of structured touch exercises that help couples to gradually habituate to the

feared stimuli (i.e. sexual activity) and learn to be mindful and present in sexual encounters. The guidelines for sensate focus recommend that couples focus on the sensations of texture, pressure, and temperature while touching each other's bodies; touching for one's own self-interest; and managing distractions in a mindful way by acknowledging them and then refocusing on the touching (Weiner & Avery-Clark, 2014, 2017). Research has found that sensate focus is an effective treatment for sexual dysfunctions improving the sexual experience for up to 83% of clients (Trigwell et al., 2016).

However, while sensate focus has dominated the field of sex therapy and has been shown to be an effective treatment for a range of sexual dysfunctions (Trigwell et al., 2016), many people do not have access to it. Previous research has found that while nearly 50% of people experience sexual dysfunctions, only around 15% of people seek help for sexual difficulties (Mitchell et al., 2013). There can be several barriers to accessing treatment including emotional factors (e.g. embarrassment or anxiety), cost, geographical location, and/or lack of available experts (Adams, 2014; Bergvall & Himelein, 2014; Wiederman & Sansone, 1999). One way of improving access to treatment for a wider population is to translate in-person interventions to online.

Online sex therapy interventions

Online therapeutic interventions have been shown to be effective for a range of concerns including mental health (Fiorillo et al., 2017; Gershkovich et al., 2017; Ivarsson et al., 2014; Spek et al., 2007) and sexual difficulties (Hucker & McCabe, 2015; Jones & McCabe, 2011; Zippan et al., 2020). These interventions typically involve a user being guided through a structured program with a range of therapeutic exercises that are provided in a text, audio, and/or video format. Involvement with a professional varies from not at all to regular support with a therapist via phone or e-mail (Spek et al., 2007). Online interventions can improve access to psychological therapies because they remove many of the traditional barriers to therapy: they are often more cost effective, involve minimal interaction with a professional which can help reduce stigma and cost, and there is no need to travel. Computer- or application-based programs can be completed in one's own time and can more easily be done throughout the week, for example. These interventions can either be provided as a standalone treatment or combined with traditional psychotherapy. Because of the stigma associated with sexual difficulties and a lack of qualified professionals to address these issues, online interventions may be particularly well-suited for sexual issues (Hucker & McCabe, 2015; Jones & McCabe, 2011; McCabe & Jones, 2013; Spijkerman et al., 2016).

A small number of studies exist that have examined the efficacy of online treatments for sexual dysfunctions. These treatments have shown promise for both male and female sexual dysfunctions. For example, Jones and McCabe (2011; McCabe & Jones, 2013) created two online intervention programs, Revive and Pursuing Pleasure, to treat female sexual dysfunction using cognitive behavioral therapy tools, mindfulness, and chat rooms (the latter two were only present in Pursuing Pleasure). Both programs showed a significant decrease in frequency of sexual difficulties and

associated distress (Jones & McCabe, 2011; McCabe & Jones, 2013). Recently, Zippan et al. (2020) developed eSense, which is also a computer-assisted online intervention for female sexual dysfunctions. An initial feasibility study of eSense showed that participants were satisfied with the program and experienced higher levels of sexual desire, arousal, and satisfaction after a week (Zippan et al., 2020). Together these initial studies show that female sexual dysfunction can successfully be treated using online interventions. These programs are designed for women to complete by themselves without their partner. While these interventions have shown promise, it may be more beneficial to address sexual desire in a relationship context.

The current study

A sex therapy app, Blueheart, is the first online application that provides a treatment for sexual desire discrepancy that is designed for couples. It combines structured sensate focus exercises with psychoeducation and communication tasks and is primarily delivered using audio and text. In the present sequential mixed methods case study (quantitative part followed by the qualitative; Schoonenboom & Johnson, 2017), we focus on the experiences of four users that underwent eight weeks of the intervention. To better understand how, when, and why the treatment might work, we selected two participants who showed a high level of improvement and two participants who showed little to no improvement during the study period. We combined their quantitative survey scores across time with interviews at the end of the study to provide a detailed perspective of the participants. Overall, the main aims of this present paper were to 1) show the changes in the participants' scores over time, 2) provide a comparison between participants for whom the treatment worked and for whom it did not, 3) understand how participants' relationship and their experience with their sexuality changed over time, and 4) understand the participants' perceptions of how and why any change happened.

Method

Participants

The participants were drawn from a sample of 10 individuals who completed eight weeks of an in-app sensate focus therapy program with their partners. We chose two participants (one man and one woman) who showed the greatest improvement over the course of the program: Fatma[1] (43 years) had been with her partner for 21 years and eight months, they had one child together, she identified as Hindu, and worked full-time. Mark (56 years) had been with his partner for 25 years and seven months, they had two children together, he identified as Christian, and worked full-time. We also selected two participants (one man and one woman) who showed the least improvement to compare the cases: Anna (36 years) had been with her partner for 10,5 years and they had two children, she was not religious, and was not currently working. Dakota (53 years) had been with his partner for one year and three months, they had no children, he identified as Christian, and worked full-time.

Treatment

The sensate focus program was delivered through Blueheart, which is an online sex therapy app. The application provides content primarily through audio sessions which include a combination of psychoeducation around sexual desire, guided touch sessions of sensate focus exercises, and written communication sessions. The content is divided into levels that are designed to be completed in a week (although they can take longer) and always include a combination of psychoeducation, touch, and communication. There were between 5–7 exercises to complete each week.

The psychoeducation included topics around responsive versus spontaneous desire, contextual factors affecting desire, managing distractions, performance anxiety, and taking things slowly, as well as instructions and information about sensate focus. Couples were given between one to two psychoeducational sessions each week apart from week one when the participants completed four psychoeducational sessions to get them started.

The touch sessions included guided sensate focus exercises following the guidelines from Weiner and Avery-Clark (2017). The exercises began with individual touch exercises to get to know one's body and to get used to touching oneself mindfully. The individual exercises were completed until week 7. Couple exercises were introduced from week 1 but they started slowly with 3-minute games (*How to Play the 3-Minute Game – Betty Martin*, n.d.) where partners were instructed to touch each other's hands, face, or whatever they chose to while fully clothed, one person at a time. From week 6, the actual sensate focus couple exercises started and by week 8, the partners were touching each other without breast, chest, and genitals. The touch sessions followed the guidelines of sensate focus by instructing the couples to only focus on the sensations of temperature, texture, and pressure rather than qualitative feelings about whether the touch felt good or bad.

The communication sessions were either about the psychoeducation (e.g. their differences in sexual desire) the participants had listened to or about the touch session (i.e. what sensations they noticed and whether they experienced any distractions) that they had completed in that week. The communication sessions were delivered in a question format where the couples were provided with questions and asked to talk to each other about the questions. The follow-up for the study ended in week 8 but the participants could continue with the program if they wished to do so.

Procedure

The participants were recruited through UserTesting, which is an online qualitative data collection platform specializing in providing companies with user testers for new applications and products. The participants were eligible to participate if they were currently in a romantic relationship and living with their partner and had issues with desire discrepancy that they wanted help for. They were provided with a description of the study and if they chose to participate, they were given an informed consent describing the purpose of the study and what the treatment entailed. They were told that the participation was voluntary, and they could

withdraw at any point if they wished to do so. The study was conducted in accordance with the ethical guidelines of the Swiss Psychological Society.

If the participants chose to participate in the study, they completed an online baseline survey through an online survey platform Qualtrics. The baseline survey included questions about demographic variables, current sexual functioning, mindfulness, sexual satisfaction, and a range of questions about their relationship and their current feelings toward their issue. The latter questions were repeated each week for eight weeks with every four weeks there being a longer questionnaire where the participants were again asked about sexual functioning, mindfulness, and sexual satisfaction. The questionnaires were sent to the participants using the UserTesting platform. Between each survey, participants completed one level of the application with their partner. For the purpose of the present case study, we used data from the weekly questions which allowed us to track the users' week-by-week change.

At the end of eight weeks of using the application, participants also participated in a two-part unmoderated structured interview (i.e. an interview in which there is no interviewer) which was conducted through UserTesting. The participants were given a range of questions to respond to verbally about their experience with the treatment, their perceived effectiveness of the treatment, and the usability of the platform for the treatment. In the first part, the questions focused on effectiveness of the treatment, and in the second part, the questions focused on the feasibility of the treatment for their issue. For the purpose of the present study, we focused on the former interview. The interviews were transcribed using an artificial intelligence software after which a research assistant corrected the interviews for any errors.

Participants received $10 directly via UserTesting for each survey that they completed and $20 for the final interview. In total, the participants received $110 as well as the application for free for the participation.

Quantitative measures

We asked participants a total of 10 single item questions every week concerning the perceived efficacy of the treatment. These questions included physical connection ("How physically connected have you felt with your partner?"), satisfaction with physical connection ("How satisfied have you been with the amount of physical intimacy between you and your partner?"), satisfaction with touch ("How satisfied have you been with the amount of touch between you and your partner?"), hopefulness ("How hopeful have you felt that you can resolve the sexual issue with your partner?"), confidence ("How confident have you felt that you and your partner will be able to overcome the sexual difficulties?"), distress ("How distressed have you felt about the sexual issue you're working on?"), communication ("How would you rate your communication about sex with your partner?"), feelings about self ("How would you rate how you feel about yourself? (adequate/good enough)"), and body image ("How would you rate how you feel about your body?"). All items were rated on an 11-point Likert scale from 0 to 10 but the exact wording of the anchors varied with some questions.

Qualitative interview questions

The participants received a total of 15 questions regarding the efficacy of the sensate focus program that included questions about perceived changes in the emotional and physical relationship with the participants' partner (e.g. "Please describe what your sexual relationship was like before, how did your problem make you feel and how did it affect your relationship with your partner and yourself, then describe how it is now."); how comfort with touch changed during the experience (e.g. "How would you describe your comfort with sex and touch before starting with Blueheart? Is there anything that changed since you started? How do you know it has changed? What changes do you notice?"); and whether they noticed any perceived changes in the partner (e.g. "Did you notice any changes in your partner since starting with Blueheart? How do you know it has changed? What changes do you notice?"). The full questionnaire with the weekly questions and interview questions as well as the full efficacy interviews for the four participants can be found on the OSF project page: https://osf.io/b9p4q/?view_only=d5f4ce0e002d48c69817953edffb754a

Results

Positive outcome cases

Fatma: Questionnaires. All Fatma's scores at the start of treatment were at least 5 out of 10 (see Figure 1). At the start of therapy, she had high confidence in her and her partner's ability to solve their sexual problems (9/10) and felt hopeful that they could resolve their issues (9/10). She also reported that she and her partner were relatively highly emotionally connected at the beginning (8/10). She reported some issues with her self-confidence and body image and physical connection with

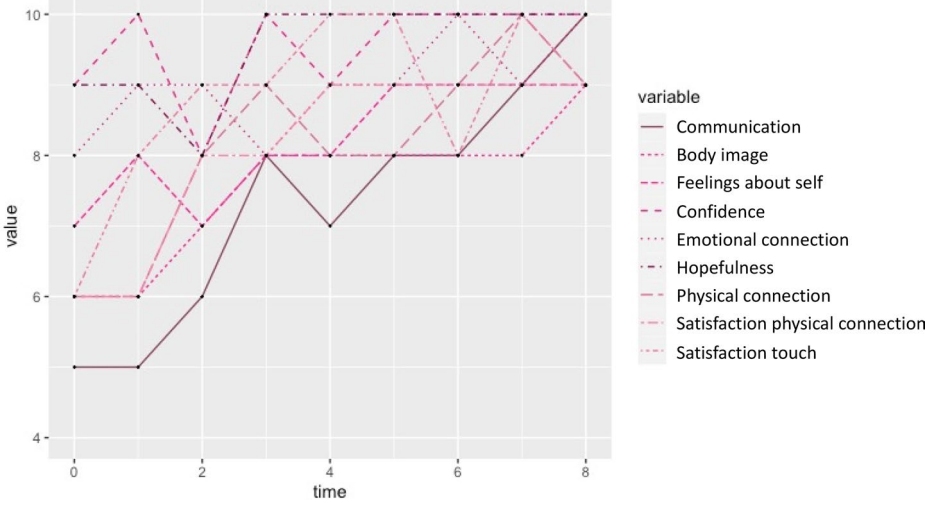

Figure 1. Fatma's scores throughout the eight weeks of the intervention.

her partner (all 6/10). She reported a relatively steady increase in all the outcomes during treatment. At the end of therapy, all her scores were between 9 and 10. She reported greatest improvement in communication about sex which went up from 5 to 10. Her distress about the sexual issue was already relatively low (4/10) and went down to 2 at the end of the eight weeks[2].

Fatma: Interview. Fatma said that her relationship with her partner had always been good, and they had always been good friends. Before treatment, she said they did not have many arguments but sexually the relationship had become stale and the sex was no longer enjoyable: "*It's more of friends being together, or roommates and having family commitments for the kid and others. It's not to a point where we thought about getting separated or anything, it's just that we became so stale and there was no excitement, like just do and have sex, as a schedule. So once in one or two weeks, I just have it because it's hard. It's been a long time. So, we just wanted to get out of that*." She also said that before starting the intervention *"there was almost zero communication, we never discussed that we had any issues even if it was becoming too routine. I never talked about it even though I felt like we should do something about it. We never felt like this was a comfortable time to start talking about it*."

Fatma felt that when she was invited for the study, she and her partner were *ready for things to change*. She said: "*this study came at the very right time. We have time due to the pandemic as some of us are still working at home. So, we have more personal time rather than always rushing to do stuff*." She explained that she *did not have many expectations* about the treatment being able to help but found that after about three to four weeks of using the app, she and her partner started to feel more *hopeful* about things changing. She said her partner was on board with using the app from the start, so they were able to become more intimate more quickly: "*Even if we did not have any plans, we just started enjoying each other's company: watching the same thing, doing the same stuff. Even when we are watching TV, we just keep touching hands or some kind of physical contact that we learned as part of the sessions that we enjoyed. We just started continuing that even when it is not part of the study so that helped*." Thus, the couple *embraced the treatment* and took the lessons on board even if they did not have very high expectations at the beginning.

After the eight weeks, Fatma spoke about many aspects of herself and her relationship that had changed as a result of the treatment. At the individual level, she said that her own *self-esteem and body image had improved* during the study. She even said that she had started experimenting with what she wears as she now feels *more comfortable in herself and with touch*. She said: "*I also feel more confident about myself, and the sensate sessions definitely helped me to self-explore. We always think about just the intimate parts, but the sessions started with the regular hands to just start feeling how your hands feel and how you feel with the rest of the body when you touch yourself like that. So that gave me more confidence in my body image for how I feel about myself*." Fatma also said that her partner used to ask for physical contact like back rubs from her, but she had never asked for it to be reciprocated and had never touched herself. She felt that for the first time in her relationship she was *able to ask for physical touch* from her partner. She said: "*I never did anything in terms of touch either for myself or with a partner until after the Blueheart*

study. We started to enjoy it and it never occurred to us that you can do it. Not at this age. I didn't even have that as one of the things I do. It is completely new that I incorporated just after starting the study."

She also felt that the *physical connection and communication about sex with her partner had improved*. She said: "*I've started looking forward to him coming home from work again, like I did when we initially met, because of the physical connection improvements that we were able to achieve during Blueheart.*" And they were "*just enjoying, joking, and talking to each other more like we used to. So overall, I should say our relationship has grown much closer. We have grown much closer.*" She also said that she and her partner had started to *enjoy sex again*: *"I've started feeling comfortable with myself and with my partner—enjoying sex more and having exciting times, rather than just doing it as part of a routine.*"

Overall, many aspects of Fatma and her relationship had improved due to the treatment. She felt more confident about herself, touch, and felt better about the physical and emotional elements in her relationship. She felt she was able to enjoy sex again and no longer felt the relationship was stale.

Mark: Questionnaires. At the start of treatment, Mark's scores were between 1 and 6 (see Figure 2). His confidence in his and his partner's ability to solve their sexual problems and his feeling of hope were both moderate (5/10). He felt somewhat emotionally connected to his partner (4/10) but felt very low in physical satisfaction (1/10), physical connection (2/10), and amount of touch (2/10) with his partner. He also felt that they communicated very little about their sexual relationship (2/10). All his scores increased during the eight weeks with his scores being between 7 and 9 at the end. Many of his answers went up by 6 or more scale points. His distress about the sexual issue was medium at the start (5/10) and went down to 3 at the end of the eight weeks.

Mark: Interview. As background, Mark talked about how his intimate relationship with his wife had changed since they *had kids* and now teenagers in the house. He

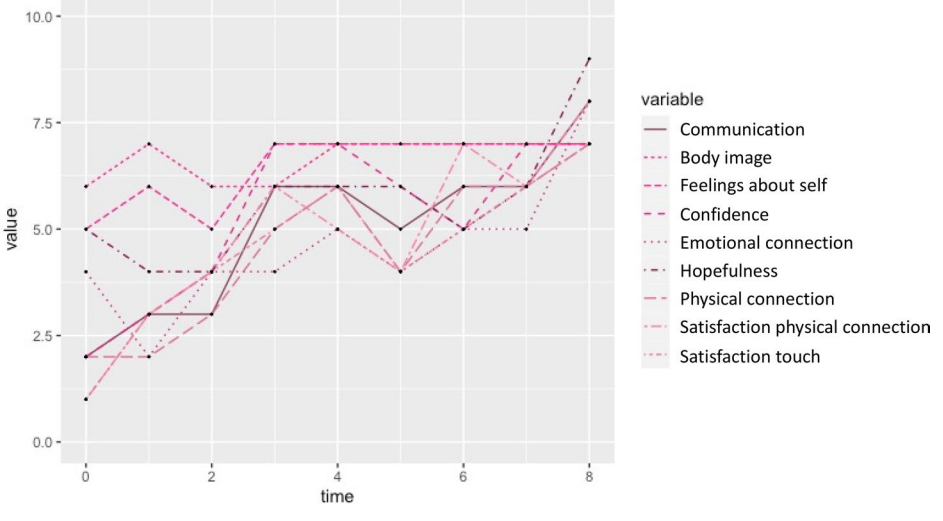

Figure 2. Mark's scores throughout the eight weeks of the intervention.

said they could only be intimate when both teenagers were out of the house, but it did not happen often, so he felt they were *out of practice with sex*. He said: "*My wife and I are both in our 50s and we have teenagers in the house. It seems like our intimacy started to suffer once we had children. I'm sure that's the same story for a lot of couples. It felt like we started drifting apart more and more. And it just became the norm to not be intimate, because we really never hardly ever had the chance*." He also said he had started *building up resentment* toward his wife because he felt she was using the children as an excuse to not be intimate with each other. He said that his resentment had then built up resentment in his wife. Mark also said that there was *next to no communication* between them about the issue. He said at most they would talk about the problem three or four times a year "*on a good year*."

Mark said that during the eight weeks, as they were doing the exercises, they *started talking* about their issues more. He said: "*Everything changed since we started using Blueheart. We've talked about our problems more. … We just have trouble connecting because we became used to not connecting for so long*." He said that they had also begun to *make an effort* with each other. He also identified that having someone, even the dog, in the house was an issue for his wife which still made being intimate difficult. He said his wife was reserved about sex and had declined to sign up to the app. He said they had only used it through his phone, she would not do the individual activities by herself, but they would do the couple exercises together. He also said he felt strange about the individual exercises as he said he had never had a problem with touching himself for pleasure.

By the end of the eight weeks, he said their *communication had improved* a great deal and they were also *intimate more often* than before. He said his wife still had hang ups about someone hearing them, but they were better able to find time for each other: "*But we are more intimate more often. Now we have engaged much more than we have in the past few years. Many years actually. That's how I noticed. And we both enjoy sex. It's just the opportunity to do it. And hang-ups my wife has about taking risks about us being overheard or someone knowing that we're doing that and just she doesn't want that*." He also said that he had *learnt more about what his wife likes*: *"I noticed my wife does respond when I touch certain parts of her body that I didn't know about before. I didn't know that she would react like that. So that's a positive change*." Finally, he said he feels that he is more *mindful* about what his wife might like than he was before.

Overall, things had gotten better as he said he felt they communicated much more frequently, and they were also intimate more often. He said he has learnt to appreciate his senses more through the sensate exercises, he was more mindful of his wife's needs, and he ess more hopeful and excited to continue with the intervention.

No change cases

Anna: Questionnaires. At the start of treatment, Anna's scores were between 2 and 4 (see Figure 3). Her confidence in her and her partner's ability to solve their sexual problems (2/10) and his feeling of hope (2/10) were both low. She felt somewhat emotionally connected to his partner (4/10), but all other scores were low at the beginning. Her scores rose slightly in the first two weeks of the treatment but went

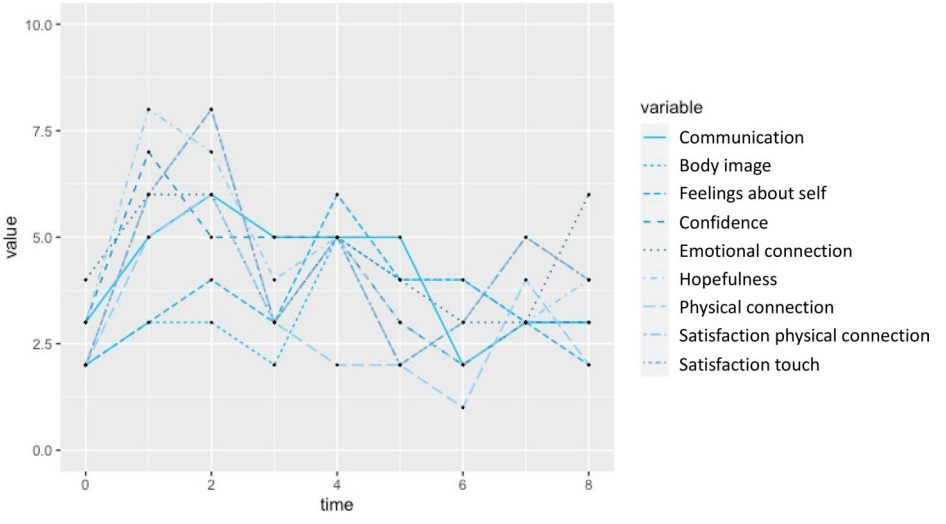

Figure 3. Anna's scores throughout the eight weeks of the intervention.

back to baseline by the end of eight weeks for most of the variables. At the end of the eight weeks, most of her scores remained between 2 and 4 apart from emotional connection which had increased from 4 to 6. Her distress about the sexual issue was medium at the start (4/10) and went down to 2 at the end of the eight weeks.

Anna: Interview. Anna stated she had been together with her partner for a long time, and they had become *more lazy sexually* before starting the app. She said they would have sex once a month at most, sometimes every other month. She said *she was happy with the frequency, but her partner was not*. She said she feels *old and tired* and even though she is trying not to feel that way she said she feels it is weighing her down. She felt there were many *contextual factors* that were affecting their relationship currently such as having children.

During the intervention, she said she felt like the *life struggles had persisted* which had made it difficult to make any progress and she was hoping for more content on how to manage sexuality and kids, how to talk about sex, and how to manage feeling tired. She said she is still *recovering from having her second child* and she said she felt the children had prevented them from making progress. She said she felt the *study period was short* compared to how long they had been together so had not expected things to change much in that time. She said she felt the exercises were quite repetitive and were hoping that they would have been more fun. She said she had felt *more hopeful at the start*: *"I think I felt a little more hopeful before starting, I was hoping that something with a light bulb would go off, which it hasn't. But I'm still not totally devoid of hope. I just think it might be circumstantial, at this moment in our lives*."

At the end of the eight weeks, Anna said she felt *communication around sex had improved* a little: "*I do think [communication] has improved for us a little bit—just being able to candidly talk about things. It's not that we wouldn't before but I think, again, just falling into a lazy trap. And then I think this kind of made us realize it was important to talk about it too*." She also said that the regular exercises had made

her *think about sex more often* as before she would not think about it at all. She also said there was maybe a slight increase in her libido: "*Maybe a slight increase just from it being a frequent topic again*." However, overall, the gains she experienced during the course of the treatment were small and she felt that their circumstances had prevented her and her partner from making progress. She also felt like some of the content was too repetitive and she was hoping it would be more fun.

Dakota: Questionnaires. At the start of treatment, Dakota's scores were between 2 and 6 (see Figure 4). His confidence in his and his partner's ability to solve their sexual problems (2/10) and his feeling of hope (3/10) were both low. He felt somewhat able to communicate (6/10) and somewhat emotionally connected (5/10) with his partner, however, his satisfaction with the physical side of their relationship was very low (all 2/10). Most of his scores remained relatively stable throughout the eight weeks and some scores were even lower than before (e.g. he felt less emotionally connected, going from 5 to 3). His distress about the sexual issue was high at the start of treatment (7/10) and went down to 5 at the end of eight weeks.

Dakota: Interview. Dakota said that before they had started the treatment, the relationship with his partner was *not as physical as he wanted it to be because his partner was not interested*. He said their *communication about sex was not good*. He said he did not have much hope that the intervention would improve things because "*they've been this way for a while and it's just how she is, you know, I just got to kind of accept it*." He felt hopeless and felt it was something intrinsic about them, especially his wife, and did not think things would change: "*I don't even know if therapy would change it. It's just part of our personality almost*." He felt the *issue was his partner's* and he himself did not have a problem: "*But it was not really on my part and was on her part*." and "*She knows it's her issue*."

During the intervention, he said his partner was not very interested in doing the exercises with him and was not comfortable with it: "*She's still not any more comfortable you know. She wasn't a fan of doing this in the first place and just wasn't*

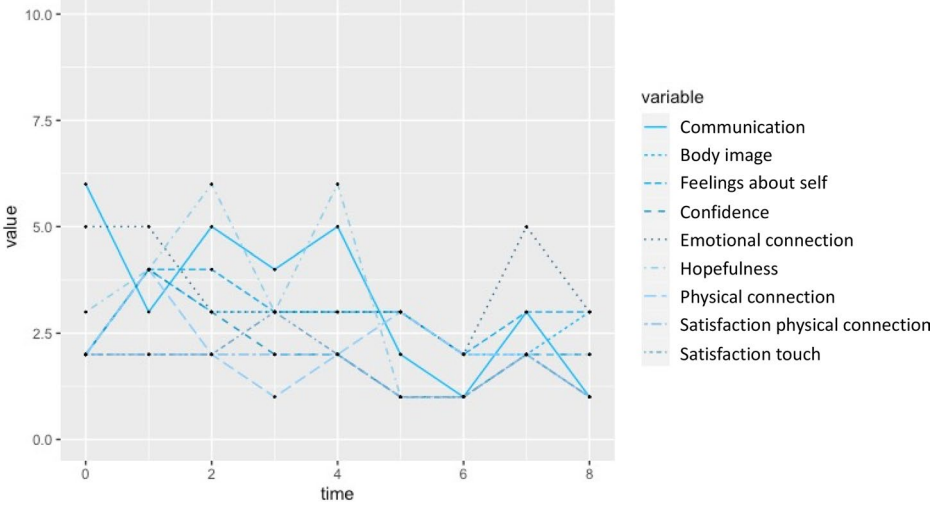

Figure 4. Dakota's scores throughout the eight weeks of the intervention.

comfortable with talking about it much, let alone really listening to the program." He said not much changed during the intervention.

At the end of eight weeks, Dakota said their emotional connection was a little bit better: "*Just that I think she sees that I want to help her work on this problem. She knows it's her issue, but she appreciates that I'm willing to be patient and try to work with her on it. So, the connection has got a little bit better because of that*." However, he continued to *view the problem as hers* and attributed the increase in emotional connection being due to *his willingness to help her* work through her issue.

One thing Dakota identified had changed for him was that he was able to be more present. He said: "*I seem to catch things more as I'm paying more attention*." He said overall he felt the intervention made sense and could potentially be helpful for other couples, but he felt in *their situation he did not think anything could change* it: "*Just that it seemed really cool laid out—all the different steps, you know. The tasks that you do each week, they all made a lot of sense. As far as I think this probably works really good with some people, especially if the guy's having an impotency issue or something, which is not my case. But if that's the case, I could see it working with couples like that, but with us, it's just different. We have a different situation. It's hard to explain*."

Overall, Dakota felt hopeless about their situation at the start of the intervention, and this did not change through the course of the intervention. He continued to see his wife as the problem and was unsure whether anything could make it better. He also felt that his wife was not interested in engaging with the app with him.

Comparison

At the start of treatment, all four participants identified that their relationship had become less physically close, they were intimate less often, and the sex they may have been having was not good. All of them said they did not communicate about the issue with each other. The participants who experienced more progress during the treatment (Fatma and Mark) displayed higher hopes at the start of therapy compared to the participants who did not make progress (Anna and Dakota). Fatma and Mark believed they could work through their issues with their partners. They also saw the issue as a shared problem that could be resolved. Dakota, on the other hand, saw the problem being his partner whereas Anna felt it was about how she was feeling and their current circumstances which she did not expect to change. Fatma and Mark also had somewhat higher scores on most of the variables at the start. Thus, seeing the problem as something that was shared and having hope and confidence that the couple could work through their issues seemed good predictors for treatment efficacy. Having better scores at the start of therapy may also help couples make progress. However, Mark also had very low scores on the physical elements in the relationship (1–2/10) at the start of treatment and was still able to make a great deal of progress so hope may be a more important predictor than the actual starting point.

All participants felt some benefit from the treatment but for the participants who made very little progress these gains were minimal and not always in areas they may have been looking to improve. For example, Dakota felt he was more mindful

and able to stay present, but he was hoping to have more sex. Mark and Fatma showed improvement across their outcomes suggesting that the intervention improved emotional and physical connection as well as communication for these participants. At the end of the eight weeks, Fatma and Mark felt the intervention had changed their whole relationship and they both continued with the treatment whereas Anna and Dakota felt somewhat more discouraged as they felt the intervention did not work for them and they discontinued treatment.

Discussion

The purpose of the present paper was to compare treatment outcomes of four users who completed eight weeks of an online sex therapy intervention program, which aimed to improve sexual desire discrepancy in long-term relationships. With this intervention and research, we hoped to begin to answer the call by the European Society for Sexual Medicine to develop and evaluate treatments for SDD (Marieke et al., 2020). The intervention was developed to improve access to sex therapy as previous research has suggested that online interventions may be particularly useful for sexual problems due to increased stigma associated with sex (Hucker & McCabe, 2015; Jones & McCabe, 2011; McCabe & Jones, 2013; Spijkerman et al., 2016). We focused on comparing several cases to highlight both successful and unsuccessful cases and thus begin to establish potential strengths and limitations of the online intervention. The results showed that the intervention is effective for improving at least some users' physical and emotional relationships.

We found that the users who showed greater improvements were more hopeful at the start of the treatment and saw the issue as a joint endeavor rather than just one person's problem to fix. This finding supports the results from Vowels and Mark (2020) who found that doing activities together to manage sexual desire discrepancy rather than doing something alone and perceiving the strategies as more helpful predicted sexual and relationship satisfaction. Furthermore, communication was mentioned by all users as one of the main problems in addressing their sexual difficulty. This is in line with other research suggesting that working on emotional intimacy (Brotto et al., 2009; Campbell & Rubin, 2012) and communication (Ferreira et al., 2014) is important for promoting sexual desire in relationships. Improved communication and emotional connection both as a by-product of using the app as well as the structured communication exercises was highlighted by all the users. Anna also said she would have preferred more explicit communication exercises. Overall, these results highlight the importance of including communication in interventions for sexual difficulties, especially for sexual desire discrepancy.

Implications for practice

The purpose of the intervention was to improve understanding of the nature of sexual desire in long-term relationships and partners' emotional and physical closeness through a series of exercises including psychoeducation, sensate focus or mindful touch exercises, and communication. Previous research has found that all these three

elements are separately important for treatment of sexual desire disorders and sexual dysfunctions (e.g. psychoeducation [Mirzaee et al., 2020; Tahan et al., 2020], sensate focus or mindfulness [Brotto, 2017a; Brotto & Basson, 2014; Trigwell et al., 2016], and communication [Ferreira et al., 2014]). However, these elements have not necessarily been combined in practice. We argue that it is both practically and theoretically important to consider these different building blocks of therapeutic interventions to fully address the clients' difficulties. For example, simply engaging in touch exercises is unlikely to help a couple develop a better sexual relationship with one another if they continue to be unable to discuss what they need or want from one another. Similarly, without providing psychoeducation to couples, couples may continue to feel alone and different because of their sexual issues and not understand that sexual desire difficulties are extremely common and there are often good reasons for why the issue has arisen in the first place. Combining all these elements can equip clients with the tools and skills to improve and to maintain progress in the future.

Furthermore, in line with previous research (Mark, 2012; Mark & Murray, 2012; L. M. Vowels, 2021; L. M. Vowels & Mark, 2020), the participants in the present study had experienced a decline in physical and emotional satisfaction associated with the perceived sexual desire discrepancy in their relationship. Difficulties in sexual desire often become a problem because of the perceived discrepancy between partners. For example, Anna stated that she was fine with the frequency of the sex in their relationship but was distressed by the discrepancy and felt bad because her partner was unhappy. Moreover, one of the differences between the users who improved and those who did not was how they felt about the difficulty: whether they perceived it as a couple problem or as an individual problem. Communication was also highlighted as an important difficulty for all study participants. This highlights the importance of addressing sexual desire disorders in the context of the relationship and including both partners in the treatment process whenever possible.

Online interventions have become more commonplace with the advance of technologies because they can be more cost effective and more easily available and accessible (Adams, 2014; Bergvall & Himelein, 2014; Wiederman & Sansone, 1999). Previous research has suggested that online interventions may be particularly useful for sexual problems (Hucker & McCabe, 2015; Jones & McCabe, 2011; McCabe & Jones, 2013; Spijkerman et al., 2016) and the present study showed that providing sensate focus through an online application can provide help for at least some couples who may not otherwise have sought help. We provided the treatment without a therapist, but the intervention can also be used in combination with a therapist as has often been done in other online interventions (Spek et al., 2007). Indeed, the results suggest that some couples may require more support than can be provided with an application alone and for those couples it may be more beneficial to provide the support using a combination of the application and therapy. This can prove more cost effective for the clients in the long-term as they may not require as many or as frequent sessions and it may also help them stick with homework as the structure and instructions are available at any time rather than only in therapy sessions.

Strengths and limitations

The study had several strengths including the use of a mixed methods design which benefited both from the weekly follow-up surveys for a period of eight weeks and an interview at the end of the study to contextualize the changes across the study period. We also provided a comparison of four different cases that allowed us to better understand when, and for whom, the treatment worked or did not work. To our knowledge, the study was also the first to examine the adaptation of sensate focus therapy for couples struggling with sexual desire discrepancy using an application without help from a therapist.

There are, however, several limitations that should be considered when interpreting the results. First, we only compared four participants who took part in the study, which allowed us to understand the participants' experiences more fully but did not allow us to generalize our findings. Second, to lower participant burden and to decrease attrition, we only asked participants to report on the first eight weeks of treatment. This meant that the participants had primarily engaged with individual sensate focus exercises and some preliminary couple exercises but had not gotten to the end of the program. Third, we only asked participants to include their partner in the exercises but did not expect the partner to complete the questionnaires or the interview. Thus, we do not know whether the partners experienced the same level of improvement as the participant. Finally, all participants were in a long-term heterosexual relationship and identified as cisgender. This was our inclusion criteria because the application is currently catered toward heterosexual couples.

There are also some limitations with the intervention, some of which were highlighted by the participants. For example, previous research has found that avoiding monotony is a predictor of sexual desire in long-term relationships (Ferreira et al., 2014). Some parts of the intervention were relatively repetitive and one of the users, Anna, highlighted this and hoped for it to be more fun and more varied. Anna also hoped for more information on how to communicate about the sexual difficulty with her partner. All participants felt that their communication had gotten better through using the app, but some users may require more communication than what the plan included. Finally, we only tested one version of the intervention but as highlighted with the communication exercises, some participants may require more guidance on certain things than others. Mark also highlighted that they struggled with the sensate focus exercises. It is not possible to customize an app experience to the same extent as therapy with a live therapist but there may be ways in which the experience can be improved to be more customized for the individual couple's needs.

Future directions

The purpose of this paper was to compare four participants who engaged in a sex therapy app to better understand whether sensate focus could be successfully delivered through an online application without a presence of a therapist. Future research is needed to establish the overall effectiveness of the treatment and to better understand the type of person or couple who could best benefit from an online application of sex therapy. The intervention involved primarily sensate focus touch exercises

and psychoeducation with some questions to help facilitate communication. However, because a lack of communication was an important theme among all the study participants, it is important to ensure that communication is fully addressed in the intervention. It is also likely that some couples may not be ready for touch exercises and may need to focus more on communication to begin with. Future research should compare whether the application is more effective with or without an added focus on communication. Finally, the application is still in its infancy and was not designed for couples in diverse relationships. However, sex is an important part of most relationships and people in non-traditional relationships (e.g. same-sex relationships) often feel they are less prepared for sexual relationships because of a lack of a mental model of what sex should look like (Rabbitte, 2020). Therefore, it is important to extend the intervention to be more inclusive of different relationships especially as it may be more difficult for non-heterosexual couples to seek therapy for sexual issues.

Conclusion

In Summary, The Present Study Provided Initial Evidence That Administering A Therapist-Free Sensate Focus Intervention Through An Online Application Can Be An Effective Treatment For Some Couples Struggling With Sexual Desire Discrepancy. Feeling More Hopeful And Confident In Being Able To Resolve The Issue And Seeing The Problem As Joint Characterized The Users Who Showed Improvement Throughout The Intervention. Communication Was Also Highlighted As An Important Contributor To The Initial Distress Around Desire Discrepancy And To The Way Out Of The Distress. Future Research Is Needed To Establish The Overall Efficacy Of An Online Sensate Focus Program For Couples Struggling With Sexual Desire Discrepancy.

Notes

1. Names are changed to protect participants' identity.
2. Distress was not included in the figures as it was the only measure where lower scores indicated an improvement.

Disclosure statement

The author works as a consultant for Blueheart Technologies Ltd.

Ethical approval statement

The study followed the ethical guidelines provided by the Swiss Psychological Society and all participants consented to participate in the study.

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Data availability statement

The data and materials can be found on the Open Science Framework project page: https://osf.io/b9p4q/?view_only=d5f4ce0e002d48c69817953edffb754a.

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