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Reflections on the group dynamic in a group cognitive behavioral therapy intervention for young adult women with moderate to severe dysmenorrhea: A qualitative analysis

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Abstract

A recent group cognitive behavioral therapy (gCBT) intervention for dysmenorrhea conducted by our team demonstrated feasibility, acceptability, and preliminary efficacy at reducing menstrual pain. This study aimed to use qualitative analyses to explore participants' reflections about the intervention's group dynamic. Participants included 20 young women ages 18–24 years with average menstrual pain of 8.0 (SD=1.1) on a 0–10 (0=none, 10=worst pain possible) numeric rating scale. Semi-structured individual and group interviews were conducted after the intervention. Researchers then conducted deductive, iterative thematic analysis using a template analysis approach. Two themes were generated: benefit and logistics. The benefit theme included two sub-themes: 1) camaraderie (an emotional, psychological, or social connection between participants); and 2) sharing (information, advice, or experiences). The logistics theme highlighted how the structure of the group influenced the dynamic and was divided into two sub-themes according to the time frame being described: 1) reactions (participants' experiences with how the group dynamic was facilitated); and 2) future (how the group structure could be improved). Results of this study contribute to the growing body of literature related to gCBT for pain conditions. Future research is needed to optimize the group dynamic and evaluate its specific therapeutic role in the treatment.

Keywords

Qualitative data analysis; Dysmenorrhea; Group cognitive behavioral therapy; Group dynamics; Menstrual pain

Introduction

Cognitive behavioral therapy (CBT) is an approach to psychotherapy that assesses the ways in which thoughts, feelings, and behaviors influence each other [1]. Generally, CBT focuses on modifying thoughts and/or behaviors to alleviate problematic symptoms (e.g., low mood,

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pain). CBT is considered a first-line intervention for a variety of psychological disorders, and there is strong research support for the use of CBT in the treatment of several pain conditions [2]. More recently, CBT has been adapted for the treatment of menstrual pain (i.e., dysmenorrhea), with favorable results [3, 4].

Historically, CBT was designed to be delivered at the individual level. Over time, the delivery of CBT in a group format (gCBT) has become increasingly popular (e.g., dyspareunia, chronic pain, depression, insomnia; [5–8]). This is due, in part, to the cost effectiveness of the treatment by administering the content to multiple individuals at once, as well as to the benefits of facilitating shared experiences across group members [9]. Research has shown that group dynamics can positively impact participants' treatment adherence and enhance outcomes (e.g., [10–13]). For example, components such as group size, cohesion, and session length have been shown to influence treatment outcomes in gCBT across a variety of domains [14, 15]. Experts suggest that non-specific factors such as sharing, connection, and validation are important components of gCBT for chronic pain [16]. Similarly, qualitative research in this population found that group participants identified "active involvement in gaining new insight" and "community and group support" as essential therapeutic elements [17].

Dysmenorrhea – pain immediately prior to and/or during menstruation – is a common and disabling condition among young women [18, 19] that is associated with increased absenteeism from school and work [20–22] and reduced quality of life [20, 23]. Although dysmenorrhea differs from chronic pain in a number of ways (e.g., cyclic in nature), both conditions are believed to share similar underlying psychological mechanisms (e.g., pain catastrophizing; [24, 25]). As such, the components of CBT used in dysmenorrhea treatments, including a pilot study conducted by our research group [26], are largely based on those used in chronic pain treatments. These components include pain psychoeducation, de-catastrophizing, mindfulness, and coping skills (e.g., [27]). Given the overlaps in symptom presentation and treatment elements across chronic pain disorders and dysmenorrhea, it is possible that similar group dynamics exist in gCBT for dysmenorrhea.

The incorporation of qualitative analyses and feedback from participants is an important component of treatment development and helps researchers and providers practice "patient first" models of care [28]. Qualitative research on participants' experiences in experimental treatments can provide valuable insight into factors facilitating treatment engagement [29], patients' desired treatment outcomes [30, 31], and patients' perspectives on components of high-quality care [32]. Such insights are useful in developing or modifying existing treatments with the overall goal of increasing treatment effectiveness. The few qualitative studies assessing women's experiences participating in dysmenorrhea treatment include assessment of interventions such as acupuncture [33] and aerobic exercise [34], but no known studies have evaluated the experiences of gCBT within this population. We sought to fill this gap in the literature by assessing participant perspectives of a novel gCBT intervention [26]. The aims of this study were: 1) to use qualitative analyses to explore participants' reflections about the group dynamic of a group cognitive behavioral therapy intervention for young adult women with moderate to severe dysmenorrhea; and 2) to compare emergent themes with those already identified in the literature.

Method

Participants

Participants included 20 young women ages 18–24 years (M=20.9, SD=2.2) who were recruited via mass email sent to female undergraduate and graduate students (n=17) as well as from those who had participated in previous studies conducted by our research team (n=3; [35]). See Table 1 for demographic information. Inclusion criteria were: 1) self-reported menstrual cycle averaging 24–32 days [36]; and 2) having at least moderate to severe menstrual pain, as indicated by a menstrual pain rating of ≥6/10 on a 0 (no pain) to 10 (worst pain possible) numeric rating scale (NRS; [37, 38]) for at least the previous three menstrual cycles before participation. Participants were excluded for 1) use of oral contraceptives or any exogenous hormones in the previous three months; 2) presence of persistent pelvic pain throughout the menstrual cycle (indicative of a chronic pelvic pain condition [39]); 3) diagnosis of an underlying medical cause for dysmenorrhea symptoms (secondary dysmenorrhea); 4) daily use of opioids (participants using other analgesics were included); and 5) developmental delay, autism, or significant anatomic impairment with the potential to preclude understanding of study procedures or treatment. Participants were enrolled in one of four cohorts. Two participants did not complete individual interviews due to scheduling difficulties, but both were present for their respective group feedback discussions (see below) and are included in the total participant count. Participants completed written informed consent, and this study was approved by the Institutional Review Board at the University of California, Los Angeles as protocol #15–001761.

Procedure

Intervention—The intervention was developed based on traditional CBT approaches for pain and has been described in detail elsewhere (see [26]). Briefly, the intervention consisted of five group sessions, each lasting 90 minutes. Sessions were held weekly with the exception of the final session, which was held two weeks following the prior session in order to allow additional time for some participants to get their periods. The four modules of the intervention were psychoeducation, mindfulness, decatastrophizing, and coping skills. The treatment was manualized and was applied similarly for all groups, with only specific topics of discussion varying from group to group. This study was registered on clinicaltrials.gov with the identifier NCT02640079.

Individual Interviews—Semi-structured interviews were conducted during the post-intervention assessment, which occurred during the first two days of the menstrual period immediately following the final group therapy session. The interview guide was based on guides developed for prior behavioral intervention studies for pain conditions [40, 41]. The first part of the interview guide focused on the participant's experiences during the group treatment, and the second part focused on the participant's current symptoms and management. The interview guide is available as Supplemental File 1. All interviews were conducted by the same female research team member (LCS) who has extensive experience with qualitative data collection. Interviews were conducted in a private room within a suite of clinical research offices and were recorded using a digital audio recorder. One interview was conducted but not recorded due to equipment malfunction; notes taken during this

interview were included in the data analysis. Two of the 20 participants did not complete post-intervention assessments and therefore did not have individual interviews; however, both of these participants were in attendance for their cohort's group feedback discussion so their feedback was included in these analyses (see below). Interviews were conducted between February and December 2016. Participants were compensated $75 cash for the post-study visit during which the interview took place.

Group Feedback Discussions—The analyses presented in this paper also included transcripts obtained from the "feedback" portion of the final group session, held in a university conference room. The therapist (LAP), a female licensed clinical psychologist and the principal investigator of the grant with both clinical and research experience, led a group discussion with participants, including their likes and dislikes about the group, what they would change about the group, etc. The therapist also inquired about the different aspects of the intervention that were important to each of the group members. The portion of the treatment protocol related to the group feedback portion is included in Supplemental File 1. Audio files from the individual interviews and group feedback discussions were transcribed into Microsoft Word by a professional transcription company and de-identified for analysis by removing names and references to specific locations.

Data Analysis—Interviews were conducted within the context of an intervention, which determined the sample size [26]. Thematic analysis was conducted using a Template Analysis approach wherein a coding template is created, usually based on a subset of the qualitative data, and revised and refined throughout the analytic process [42, 43]. Template analysis is theoretically flexible and well-suited to a variety of conceptual frameworks and approaches [42, 43]. We used a deductive, semantic approach, meaning that the interview questions and approach to coding were informed by a biopsychosocial model of health [44]. Researchers specifically developed codes related to group dynamic as that was the focus of the current investigation. First, authors LCS and CRT read and re-read all the transcripts to familiarize themselves with the data. Both authors then conducted open coding of 5 individual interview transcripts and 1 cohort transcript to generate initial codes. Authors met to compare codes, discuss the data and identify early themes, and create an initial codebook. The initial codebook was then applied to the remainder of the data. The coding process was iterative; codes and the codebook were revised and expanded as the coding process progressed. Discrepancies in interpretation and coding were resolved via consensus discussion. After the final codebook was reached, researchers re-reviewed all transcripts to ensure that coding had been applied consistently. Coded excerpts were then collated and reviewed. Themes were developed based on the coded excerpts and were compared back to the original transcripts to ensure fidelity to context. Themes were reviewed and refined until authors agreed that the themes developed represented both a sophisticated and complete analysis of the data. Methodological approach and themes were then reviewed by a research team member (SFG) who was not involved in the intervention or coding process but has mixed-methods research experience developing, delivering, and assessing group interventions to women, and suggestions were incorporated into the final report.

Results

Characteristics of Participants and Interviews

Participants' average menstrual pain was 8.0 (SD=1.1) on the NRS and average age at menarche was 11.7 years (SD=1.3). See Table 1 for additional demographic information. [Table 1 around here] Four separate cohorts were conducted, and cohorts varied in size from three to eight participants. Fifteen participants (75.0%) attended all 5 intervention sessions; 4 (20.0%) attended 4 sessions, and 1 (5.0%) attended 3 sessions. The average length of individual interviews was 19.2 minutes (SD=5.9; range 10.4–32.0). The feedback discussions as part of the final session each lasted around 30 minutes. Nineteen of the 20 participants were in attendance for their cohort's feedback discussions.

Themes

Two major themes were developed from the data. The first theme, *Young women derived benefit from the intervention's group dynamics*, consists of two subthemes: 1) *The group facilitated camaraderie among participants*, and 2) *Participants valued being able to share with each other*. The second theme, *Structural and logistical elements related to the group dynamic can influence participants' experiences,* consists of two subthemes: 1) *Reactions to group format and structure*, and 2) *Considerations related to the group dynamic for future groups*.

Theme 1: Young Women Derived Benefit From the Intervention's Group Dynamics

Subtheme: The Group Facilitated Camaraderie Among Participants ("Camaraderie").: The camaraderie sub-theme reflects emotional, psychological, or social connections between participants. Many participants expressed that being in a group with other young women who also experienced significant menstrual pain made them feel like they weren't alone:

> I like how the group pretty much brought people together in a way, because all of us have the same issues and work with menstrual pain. I thought at first, it was just me that I actually have a lot of pain actually during my period but it'd help in a way that I was like, "Okay, it's normal for you to have pain." (ID 223)

This connection was especially salient for a medical condition that is often stigmatized and therefore not discussed openly:

> Even though it's not like a support group, there's a lot of camaraderie here, so it feels good to talk about these things that you don't maybe normally get to talk about in your day-to-day life. (Cohort 1 group discussion)

One participant described the relief she felt just from knowing that other people experience menstrual pain in the same way she does:

> It's nice to hear other people have like period pain isn't just made up but it's also … I don't know. It relieves a little bit talking about it. (ID 216)

Even for participants who may have discussed menstrual pain outside of the group on a surface level, the group allowed them to dive deeper with others who can relate:

> I also like the group setting. I think, now I'm kind of used to it, but in the beginning I remember thinking, "Oh, this is kinda nice," knowing that you're not the only one going through this. I know sometimes you do mention, "Oh, you don't have pain or cramps," to people, but you don't go into details like we did here. So it's like it's nice knowing that there's other people also dealing with school and all these crazy thoughts and talking through it. (Cohort 4 group discussion)

Ultimately, it was clear that the camaraderie evident in the group was essential to developing relationships and being comfortable with each other:

> I think a group like this [is] ideal…Because it gives us a chance to get to know each other. That's where, I guess, the comfort comes in. (Cohort 4 group discussion)

Subtheme: Participants Valued Being Able to Share With Each Other ("Sharing").: The sharing subtheme represents participants sharing information, advice, and/or stories with each other. Participants reflected that the process of sharing their experiences with menstrual pain created an environment that was a safe place to discuss these issues. For example, many participants described learning coping skills from other participants that they otherwise would not have thought to try:

> Like what I think the most valuable thing was the interaction between all of us and different perspectives. Because all of us have different opinions. All of us are different, so each one us of contributed in different ways. Each one of us had different coping skills. I'm pretty sure if I was just by myself I would not have (thought) of aromatherapy. I would not have tried it. The group actually is the one that enriches the experience. (Cohort 4 group discussion)

Some participants tried the skills suggested by a peer and reported back on their experiences:

> I've used the coping skills that I've learned from other people, like the heating pad, I wouldn't use that at all (in the past). (ID 218)

And,

> I liked how there was a group setting and how you could just talk about our different experiences with menstrual pain. It was good. Bouncing ideas off each other, I liked that a lot…I liked trying the techniques that other people talked about, like exercising and stuff like that and seeing what worked for me. (ID 208)

Participants also described that sharing advice about cognitive responses to pain was beneficial to their process of mentally assessing their own pain. In the conversation with the research team member below, one participant describes how working with a peer during a de-catastrophizing exercise helped her gain perspective on her own catastrophic thoughts:

> Participant: Because it kind of gave us, or at least me, a different perspective than mine. It helped me actually… since I was trying to analyze or help somebody … to actually help figure their own kind of like main, what they're afraid of. Actually, it made it easier for me to not having like… not have to really think to do it. I

> just tried to apply it… Like, it gives me kind of like the practice. It's kind of like practice and theory at the same time. So I really liked that because without even thinking I was already doing it. (Cohort 4 group discussion)

While reflecting on how aspects of the intervention could possibly be administered by other methods (e.g., online sessions, a mobile app, etc.; see Theme 2 below), one participant emphasized the importance of in-person, peer-to-peer interaction:

> I feel like most of what I learned in the group was actually by interaction. Whenever we are analyzing or de-catastrophizing, it's like we're actually going to an example (to) work on. All of us were asking different types of questions and we got to the bottom. I think that you cannot actually get to the bottom of it just by listening to an app. (Cohort 4 group discussion)

Theme 2: Structural and Logistical Elements Related to the Group Dynamic Can Influence Participants' Experiences—This theme highlighted how the structure of the group (e.g., group size, how communication was facilitated, etc.) can influenced the group dynamic and how that could be leveraged for future groups.

Subtheme: Reactions to Group Format and Structure ("Reactions").: Many participants expressed that they appreciated how communication was facilitated during sessions: "I like that we all took turns talking, and so everyone had input, so that it wasn't just really quiet and somebody didn't talk or somebody did all the talking" (ID 215) and "I liked that everyone was very attentive the whole time" (ID 211). One participant alluded to the roles of the group leader as facilitator in describing how participants were prompted to share as they felt comfortable:

> But I liked that we like shared, that like everyone went around and we were each forced to each say something. Not forced, but you know what I mean?…Like given the chance to say something. Because I think that that makes you get more out of the experience… (ID 206)

However, some participants expressed the desire for more interaction among participants:

> I wish the group session could be more interactive so we can talk to each other instead of, you know, (therapist) or you [coordinator] talking to every single one. (ID 217)

> I think that maybe, if anything, when we talk more instead of just focusing on one thing at a time, maybe just like going around, like back and forth and stuff, talking to each other, like all of us. So then that way maybe we can bounce ideas off of each other. Because sometimes you're talking about something, and someone has a thought about that, so they could say something and then it makes you think about something else that happened at that same time. I think that could have been helpful. (Cohort 3 group discussion)

Group size was also a contributing factor in participants' experiences. One participant who was part of the smallest cohort (3 participants) expressed that the small size limited the directions the discussions could take based on fewer experiences to draw from:

> …maybe the group part could have been with more people, because the three of us…we had similar experiences, and it was like, okay. Then we sometimes had the same type of things that we tried to control it with. I think it was different in one or two things, but it was pretty much the same. (ID 204)

Participants in the larger cohorts (between 5 and 8 participants) reported that they thought the group size was good: "It was a good size too, having that many people in there" (ID 218). As one participant described, the beneficial elements of the group dynamic (camaraderie and sharing, see above) were facilitated by the group size:

> Because it gives us a chance to get to know each other. That's where, I guess, the comfort comes in. Because it's a smaller and tight-knit group. (Cohort 4 group discussion)

Subtheme: Considerations Related to the Group Dynamic for Future Groups ("Future").: When discussing how the group could be administered in the future, many participants expressed that a number of the group elements were appropriate and would not need to be changed for future groups. When discussing the possibility of administering the treatment remotely via online groups or mobile apps, participants expressed that it might be possible to supplement the content with an online component, but that the intervention should not be moved exclusively online. When answering whether she would like an app that walked her through certain treatment components like mindfulness practices, one participant answered:

> Not really, because I think when I see something in-person or I actually interact with people in-person I take it more seriously. Because somebody is face-to-face saying something so I'm actually going to listen and understand rather than just kind of doze off and put my phone away because it's annoying or something. (Cohort 4 group discussion)

Others emphasized that even if there were other members in this hypothetical virtual group, an online intervention may not be suitable for this type of treatment. When discussing an online group video chat, one participant explained:

> For me, that would be even more uncomfortable…Because I don't even know them and even though I see them more often online, I don't think I'm gonna be comfortable. (Cohort 4 group discussion)

However, participants did feel like there was a possible role for online groups as tools for sharing general information, articles, etc.:

> If the page were like good for anything, maybe use it for like, like you said sharing… Like, if I was scrolling on Facebook and I saw something about menstrual stuff, I might share it in the group and be like, "Hey guys, check this out" or if like someone had another idea or tried something new, they might like post that. (Cohort 4 group discussion)

When discussing the practicalities of facilitating groups, participants described that while the level of interaction among participants was good (see above), camaraderie could have been even stronger by making a few changes. One participant suggested adding activities

like ice-breakers, which would enable the group members to get to know each other better. Neutral ice-breakers (i.e., not related to menstruation or menstrual pain) were preferred, as they would not create awkward first encounters:

> This is what we did in my old group. The first day, we paired up with a person and the other person like had to introduce us, after we talked to them. (Cohort 3 group discussion)

Another participant suggested purposefully changing seating from session to session to encourage different relationships to form:

> If you guys wanted to do that, with like the reshuffling, I think maybe you could put like an index card with their name and on the back put like a question that they have to answer for that day, like each time with just a fun question, that when you start it, we can just share. (Cohort 3 group discussion)

Discussion

This is the first known study to explore the group dynamics of a gCBT intervention for women with primary dysmenorrhea. Qualitative analyses generated two themes, each with two subthemes. [Table 2 around here] The first theme surrounded participants' descriptions of the benefits of the group dynamic, particularly the importance of generating camaraderie and having a space to share experiences. The second theme surrounded how the structural and logistical aspects of the group dynamic influenced participants' experiences, particularly the importance of a moderate group size (6–8 participants) and holding the group in person.

Women described feeling comfortable discussing their experience of dysmenorrhea with others, connected to the other group members, and supported by their peers through the sharing of coping skills. The importance of such camaraderie and sharing in group therapy is well documented. Irvin Yalom, the preeminent group psychotherapist, identified several salient therapeutic factors that help facilitate effective group therapy [9], of which the factors *universality* and *imparting knowledge* closely align with themes identified in the present study. Yalom described *universality* as validating a participant's experience, reducing isolation, and increasing self-esteem, and *imparting knowledge* as the sharing of knowledge about treatment experiences, services, or skills [9]. These themes have also been identified within the literature on gCBT interventions for chronic pain. Furnes and colleagues [17] described "the significance of community and group support" and "the significance of active involvement in gaining new insight" as the two prominent themes that emerged following an 8-week group for the management of chronic pain. Our findings mirror these results and underscore the importance of creating spaces for self-reflection and expression, both of which are necessary for the identification of personal problems and the ability to learn from others [45].

Extant literature also suggests that these facets of one's experience are important in the management of dysmenorrhea itself. Women with dysmenorrhea identify social support and learning coping skills from others as critical aspects of self-care [46, 47]. Conversely, the lack of widespread knowledge about dysmenorrhea can lead to women feeling isolated and alone in their experience [48], and, for some, a lack of awareness that their symptoms are

abnormal [49]. Women also report that dysmenorrhea is not always seen as a legitimate health concern by providers, employers, and other members of society [49], which likely results from enduring social stigmas associated with menstruation [50]. These invalidating experiences can further feelings of isolation and reduce the likelihood of seeking medical help for dysmenorrhea in the future [51].

Increased awareness of dysmenorrhea and access to treatment are clearly unmet needs of this population [52, 53], and the thoughtful creation and dissemination of group therapies can help address these needs. Indeed, results from the present study suggest that gCBT for dysmenorrhea can reduce feelings of isolation and provide support and validation for women. Validation is a powerful therapeutic tool that is theorized to reduce emotional arousal, empower individuals, and increase motivation (for a discussion, see [54]). Additionally, participants in our gCBT helped each other practice skills in session and suggested other coping skills that could be useful for others to try. Learning from peers can be an effective method of intervention (e.g., [55, 56]), and peer support can have beneficial effects on individuals' acceptance and perceptions of dysmenorrhea (e.g., [57]), as well as other health conditions (e.g., [58]).

In addition to reflecting on the benefits of group therapy, participants also shared their perspectives on the structural components of the group. Women reported that a moderate group size, consisting of 6–8 participants, was optimal for facilitating rich discussion and closeness. Several participants expressed concern with translating this treatment to a virtual setting due to increased fears of discomfort and reduced engagement. Virtual therapy may challenge participants' abilities to understand behavioral and emotional nuances that are often experienced in-person, facilitate emotional distancing, and possibly perpetuate avoidance [59]. Despite this, much research exists documenting comparable effectiveness of virtual and in-person treatment across a variety of disorders (e.g., [60–63]), including chronic pain [64]. Virtual care is also believed to reduce barriers to treatment (e.g., [65, 66]), which, given the lack of available interventions for dysmenorrhea, is a relevant consideration. As such, it is possible that a virtual gCBT for dysmenorrhea may be similarly effective and help increase access to care for many women, despite reduced emotional closeness. It is important to note that this study was conducted before the onset of the Covid-19 pandemic after which virtual individual and group therapies were universally implemented and the acceptability and feasibility of telehealth became more routine [67, 68]. Researchers are encouraged to compare the effects of in-person and virtual gCBT for dysmenorrhea to further elucidate the role of in-person connections on group cohesion and/or symptom reduction.

There are a few limitations to the current work that should be addressed. First, all participants were undergraduate or graduate students at a large public university. As such, the results may not generalize to women of different backgrounds (e.g., older, working full time, parenting, never attended college). It is possible that women in different life stages or circumstances may experience different benefits from the group. For example, it is possible that women with high demands for their time and attention (e.g., working full time, raising a family) may dedicate less energy to group therapy, which could reduce the potential benefits of the group. Participants came from a variety of racial and ethnic backgrounds,

which may have introduced culturally-derived differences in pain experiences, but also helps increase the generalizability of these results across these demographic variables. It is possible that these cultural influences may have introduced barriers to communication during the interviews. However, by the time of the interview, the participants had all had extensive interaction with the interviewer through the process of study participation and had engaged numerous times with the interviewer both individually and during group sessions. Second, it is possible that women's perception of the importance of groups being held in-person may vary by geographic location. For example, women living in more rural areas may prefer to meet virtually to reduce barriers to treatment that make it difficult to meet in person for group sessions. Further research is needed to assess the accessibility and effectiveness of this intervention across a variety of demographic backgrounds and treatment modalities. This study also did not formally or quantitatively assess levels of group cohesion, affiliation, and therapeutic alliance, or individual participant values and personality traits [9, 27, 69]. These factors may be important in gCBT for dysmenorrhea and should be investigated in future research. Though the interview guide was based on guides used in previous behavioral intervention studies for pain conditions, the exact guide as used in this study was not tested prior to implementation. Finally, it is possible that the research team's varying worldviews, underlying assumptions, and relationships to the participants may have biased these analyses. However, lengths were taken to reduce potential bias from the outset. For example, coding, analyses, and assistance in the interpretation of results were conducted by individuals other than the principal investigator (LAP), and one of the individuals involved in data analysis did not conduct the group sessions.

The present study serves as an important foundational study exploring group dynamics in gCBT for dysmenorrhea and encourages opportunities for future research. Reflections on the group dynamic in this intervention contribute to the growing body of literature related to group mind-body interventions for pain conditions. Despite the sensitivity of discussing menstruation and menstrual pain, participants reported experiencing benefit from the group aspect of the intervention. A number of structural elements were identified as being appropriate, while other elements were identified as possible targets for improvement. Future research is needed to optimize the group dynamic and evaluate its specific and unique therapeutic role in the treatment. These results may aid other researchers in developing similar groups to enhance the variety of treatment options for women with this common and debilitating condition.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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The data that support the findings of this study are available on request from the corresponding author, LCS. The current approved institutional mechanism for data sharing is by individual data use agreements executed between the interested parties.

Biographical Notes

Laura C. Seidman's educational background is in cognitive science, and she is currently the senior research project manager at McLean Hospital's Clinical and Translational Pain Research Laboratory. Ms. Seidman is responsible for the coordination of various studies investigating laboratory pain responses and behavioral interventions in populations of adolescents and young adults with dysmenorrhea. Ms. Seidman is a Certified Clinical Research Professional (CCRP® SOCRA) and has been involved in various networking and education initiatives for the clinical research community.

Ariel B. Handy, PhD, is a licensed psychologist foundationally trained in dialectical behavior therapy with extensive training in exposure therapy and specific expertise in women's mental health. Dr. Handy's private practice focuses on evidence-based behavioral therapy for adolescents and adults, including exposure therapies for PTSD, OCD, social anxiety disorder, phobias, and eating disorders; modified treatments for co-occurring disorders; and psychodiagnostic evaluations. In addition to her private practice, Dr. Handy is actively engaged in research at McLean Hospital.

Catherine R. Temme, MA, has an educational background in psychology with a specific focus on school psychology and neurodevelopment. Her research experience includes study coordination within both academic health and clinical research organization settings. In addition to her work in clinical research, Ms. Temme has experience as a psychotherapist and behavioral health specialist focusing on skill-building, psychoeducation, and treatment planning with a diverse clientele.

Shelly F. Greenfield, MD, MPH, is an addiction psychiatrist, clinician, and researcher. Her research focuses on a wide range of questions regarding development, implementation, quality, and financing of treatment services for substance use disorders. Dr. Greenfield is particularly interested in gender differences in substance use disorders and development of effective treatments for substance use disorders in special populations, including interventions specifically for women. Dr. Greenfield also serves as the Chief Academic Officer at McLean Hospital and sits on numerous boards and committees.

Laura A. Payne, PhD, is a licensed clinical psychologist and the director of the Clinical and Translational Pain Research Laboratory at McLean Hospital. Her clinical expertise is in transdiagnostic cognitive-behavioral treatment for patients with anxiety and co-occurring diagnoses, including pain, depression, and any disorder with an emotional component. Dr. Payne's research focuses on identifying neurobiological, behavioral, and psychological biomarkers related to pain, specifically with the aim of identifying factors associated with the transition from recurrent to chronic pain in girls and young women with menstrual pain. Her work also extends to developing and evaluating novel treatments for menstrual pain. Dr. Payne is actively involved in professional organizations and serves on several editorial boards.

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Table 1.

Participant Demographics

Measure	**Mean (SD)**
Age	20.9 (2.2)
Menstrual pain NRS	8.0 (1.1)
Age at menarche	11.7 (1.3)
Measure	**N (% of group)**
Race	
White	6 (30.0%)
Asian	6 (30.0%)
American Indian or Alaska Native	1 (5.0%)
Multi-Racial	2 (10.0%)
Does Not Identify	5 (25.0%)
Ethnicity	
Hispanic/Latino	11 (55.0%)
Non-Hispanic/Non-Latino	9 (45.0%)

Note: NRS = Numeric Rating Scale

Table 2

Themes, Subthemes, and Example Quotations

Theme		
Subtheme	**Definition**	**Example Quotations**
Young women derived benefit from the intervention's group dynamics		
Camaraderie	Emotional, psychological, or social connections between participants.	"Even though it's not like a support group, there's a lot of camaraderie here, so it feels good to talk about these things that you don't maybe normally get to talk about in your day to day life." "It's nice to hear other people have like period pain isn't just made up but it's also … I don't know. It relieves a little bit talking about it."
Sharing	Participants sharing information, advice, and/or stories with each other.	"I liked how there was a group setting and how you could just talk about our different experiences with menstrual pain. It was good. Bouncing ideas off each other, I liked that a lot…I liked trying the techniques that other people talked about, like exercising and stuff like that and seeing what worked for me." "I feel like most of what I learned in the group was actually by interaction."
Structural and logistical elements related to the group dynamic can influence participants' experiences		
Reactions	How the structure of the group influenced the dynamic (e.g., group size, communication, etc.).	"I like that we all took turns talking, and so everyone had input, so that it wasn't just really quiet and somebody didn't talk or somebody did all the talking." "…maybe the group part could have been with more people, because the three of us…we had similar experiences, and it was like, okay. Then we sometimes had the same type of things that we tried to control it with."
Future	Insights into how structural and logistical elements of the group could be maintained or improved upon for future groups.	"If you guys wanted to do that, with like the (seat) reshuffling, I think maybe you could put like an index card with their name and on the back put like a question that they have to answer for that day, like each time with just a fun question, that when you start it, we can just share." "For me, that [group video chat] would be even more uncomfortable…Because I don't even know them and even though I see them more often online, I don't think I'm gonna be comfortable."