

Examining the feasibility of acceptance and commitment therapy self-help for problematic  
pornography viewing: Results from a pilot open trial

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### Abstract

This pilot study evaluated the feasibility of an acceptance and commitment therapy (ACT) self-help program for problematic pornography viewing (PV). A sample of 19 adults seeking help for problematic PV were recruited in an open trial. Participants reported adequate program acceptability, although only 45% of those completing post-assessment read at least half of the self-help book. Significant improvements on problematic PV and cognitive fusion were found over the 8-week intervention period, with effects sustaining at 8-week follow-up. Participants who read more improved more on PV problems and psychological inflexibility. Overall, an ACT self-help approach appears feasible and potentially efficacious for PV.

*Keywords:* Acceptance and Commitment Therapy; Self-help; Bibliotherapy; Pornography.

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Pornography viewing (PV) is a common behavior, with some studies indicating that approximately 75% of men and 41% of women have intentionally viewed erotic images online in their lifetime (Albright, 2008). In some instances, PV can become problematic in terms of difficulty controlling the behavior and resulting negative consequences, with some likening such patterns to pathological concepts including addiction (Duffy, Dawson, & Das Nair, 2016), compulsions (Cooper, Putnam, Planchon, & Boies, 1999), and hypersexual behavior (Stein, Black, Shapira, & Spitzer, 2001). Research has found problematic PV to be associated with a range of negative psychosocial outcomes including psychological distress, isolation, decreased quality of life, poorer sexual functioning, occupational concerns, spiritual/religious concerns, and impaired intimate relationships (e.g., Albright, 2008; Baltazar, Helm, McBride, Hopkins, & Stevens, 2010; Doring, 2009; Harper & Hodgins, 2016; Twohig, Crosby & Cox, 2009). Despite these documented negative consequences for some individuals, there has been very limited research on potential treatments for those struggling with problematic PV.

One promising treatment for problematic PV to-date is acceptance and commitment therapy (ACT; Hayes et al., 2012), which has been found to produce positive results in two outcome studies (Crosby & Twohig, 2016; Twohig & Crosby, 2010). The first study used a multiple baseline design with six adult males struggling with problematic PV (Twohig & Crosby, 2010). Over the course of eight, 90-minute sessions, participants reported an 85% reduction in PV as well as improvements in quality of life and psychological inflexibility. A second recently completed randomized trial compared a 12-session ACT protocol to waitlist with a sample of 28 adult males (Crosby & Twohig, 2016). ACT produced greater improvements relative to waitlist

in PV frequency, negative consequences of PV, sexual compulsivity, and quality of life. Overall these results suggest ACT is a promising approach for problematic PV, at least when delivered through face-to-face individual therapy.

ACT is a transdiagnostic treatment that has been found efficacious for a wide range of problems including depression, anxiety, addictions, binge eating, obsessive compulsive disorder, and related compulsive disorders (e.g., trichotillomania) across over 150 randomized controlled trials (Hooper & Larsson, 2015). ACT treats these various problems by targeting a common core pathological process, psychological inflexibility, in which behavior is rigidly guided by internal experiences (e.g., thoughts, emotions, urges) rather than direct contingencies or personal values. Examples of psychological inflexibility include experiential avoidance (attempts to avoid, escape, or otherwise control unwanted inner experiences) and cognitive fusion (the dominant control of cognition over behavior). Consistent with this theory, mediational research has consistently found that the impact of ACT on various problems is accounted for by reductions in psychological inflexibility (Hayes et al., 2013; Hooper & Larsson, 2015).

In support of applying ACT to PV, recent research indicates that psychological inflexibility is an important contributor to problematic PV. For example, one study found that psychological inflexibility scores were higher among adults reporting greater problematic PV (Wetterneck et al., 2012). Another study found a moderation effect such that pornography viewing frequency was more strongly related to impaired quality of life among those high in psychological inflexibility, suggesting frequent viewing is particularly problematic among those who are inflexible (Levin, Lillis & Hayes, 2012). Furthermore, initial research suggests that viewing for psychologically inflexible reasons specifically may account for problematic PV. One study found that pornography use was problematic when individuals were psychologically

inflexible with their sexual thoughts/urges, but not necessarily when frequency of viewing was high (Twohig, Crosby & Cox, 2009). Another new study found that viewing specifically as a way to avoid emotions fully mediates the relation between PV frequency and negative outcomes (Levin, Lee & Twohig, under review). Overall, these studies suggest that psychological inflexibility might be especially relevant in accounting for when frequent PV becomes problematic for some individuals. Thus, ACT as a well-known treatment for reducing psychological inflexibility might be efficacious for problematic PV.

The current pilot study sought to expand on the outcome research by evaluating the feasibility of ACT delivered in a self-help format for problematic PV. Although individual therapy is a widely used method for delivering services, self-help may offer unique features that expand the reach of treatment (Kazdin & Blase, 2011). For example, individuals seeking to receive evidence-based services for problematic PV are likely to encounter challenges accessing a provider with adequate training for this problem (Short et al., 2016). A self-help approach could offer an alternate route to receive specialized care for problematic PV, potentially as an adjunct to face-to-face therapy. Furthermore, given the prevalence of shame related to PV (e.g., Baltazar et al., 2010; Grubs, Sessoms, Wheeler, & Volk, 2010), some individuals may not be willing to discuss these problems with a live therapist. Again in this case, a self-help approach could provide an alternate method for receiving help more anonymously and privately.

Research indicates that ACT can be effectively delivered in self-help formats including books (e.g., Jeffcoat & Hayes, 2012; Muto, Hayes & Jeffcoat, 2011), websites (e.g., Levin et al., 2015; 2017), and mobile apps (Torous et al., in press), although this has not yet been tested with problematic PV. Of most relevance to the current study, two randomized controlled trials have evaluated the ACT self-help book *Get Out of Your Mind and Into Your Life* (GOYMIL; Hayes &

Smith, 2005), which is written to be broadly applicable to a wide range of problems. Both studies found that ACT reduced psychological distress, improved quality of life and reduced psychological inflexibility relative to a waitlist condition among Japanese college students living abroad (Muto, Hayes, & Jeffcoat, 2011) and K-12 teachers and staff (Jeffcoat & Hayes, 2012).

The current pilot study sought to evaluate the feasibility, acceptability, and potential efficacy of an ACT self-help approach based primarily on GOYMIL with a sample of 19 adults seeking help for problematic PV. Although a more tailored intervention would potentially have greater effects on PV, there are currently no such self-help books for PV available based on ACT. Thus, GOYMIL was used as an initial self-help program to determine the potential feasibility of ACT self-help as well as identify areas for future revisions in developing a more tailored self-help ACT book for PV.

## **Methods**

### **Participants**

A sample of 19 participants were recruited through flyers posted throughout the community and college campus in a small city in the mountain west region of the United States. Eligibility criteria included being 18 years of age or older, fluent in English, and self-identifying as struggling with PV. Participants completed a phone screening for eligibility and all screened participants met eligibility criteria.

The sample was 90% male with a mean age of 23.10 ( $SD = 4.48$ ). The sample was almost entirely non-Hispanic White (95%). The majority of participants were single at baseline (63%) with 26% reporting being married. Most participants (84%) identified as belonging to the Church of Jesus Christ of Latter-Day Saints (LDS), the predominant religion in the region and one in which PV is generally viewed as inconsistent with the religious beliefs.

In terms of PV at baseline, participants reported viewing an average of 1.51 hours a week ( $SD = 1.15$ ,  $Median = 1.00$ , range = 15 minutes to 5 hours per week). All participants reported attempting to quit using pornography at least once in the past, with 74% having tried seven or more times. Approximately half (47%) reported receiving some form of therapy for PV in the past, although none had received ACT before.

## **Procedures**

*Baseline appointment.* Participants first completed an in-person appointment. After providing informed consent, participants completed a baseline assessment on the computer (to mirror post and follow up assessment that were completed online through the Qualtrics survey platform). Participants were then oriented to the self-help intervention, which included receiving a free copy of GOYMIL as well as the option to use the freely available ACT Coach mobile app (NCPTSD & NCTT, 2014)<sup>1</sup>.

*Self-help intervention.* Treatment consisted of an 8-week intervention in which participants read an average of 2 chapters per week from GOYMIL. The self-help book includes a total of 15 chapters covering key concepts and skills from ACT. This includes dedicated chapters emphasizing core ACT components and related skills including acceptance, cognitive defusion, mindfulness of the present, self-as-context, values, and committed action. As

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<sup>1</sup> Only half of the sample ( $n = 10$ ) reported having an iOS device that could use the ACT Coach mobile app. Of those, only 6 participants reported using the app at least once and only 1 participant used the app regularly (for 3 weeks). Given the very low use of the mobile app and its optional, secondary role in the intervention, we will focus on the self-help book when discussing the methods and results.

previously noted, GOYMIL is designed to help with a wide range of problems, focusing on a variety of examples and emphasizing applying general concepts to one's specific challenges and life goals. Participants were informed of this as part of initial study procedures and asked to provide feedback to help guide future development of a tailored ACT self-help program for PV.

The study emphasized self-guided use of the book over the 8-week period. Although contact from the researcher was minimized after the initial appointment, a weekly check-in was provided online to monitor ongoing program engagement. This check-in assessed participants' ongoing use and reactions to the content of the chapters read each week as well as monitoring ongoing PV. When check-ins were not completed, emails, and to a lesser extent phone calls, were used to follow-up and prompt ongoing engagement. Thus, although the intervention was primarily self-guided, a minimal degree of guidance was provided from the researcher to help track and maintain adherence.

*Post and follow up assessments.* A second online post assessment was completed 8 weeks after baseline through an email link sent to participants. This included the same questionnaires as baseline with the addition of measures assessing program acceptability. A final follow-up questionnaire was sent 8 weeks after the post assessment.

## **Measures**

*Weekly PV Hours.* Average number of hours viewing pornography each week was assessed as an outcome variable. Participants entered the number of hours in response to the question "How much time on average do you spend on pornography per week? *Enter in terms of average number of hours per week.*" Other studies have used similar self-report methods to assess pornography viewing, which have been found to be sensitive to the effects of ACT interventions (Twohig & Crosby, 2010).



*Cyber-Pornography Use Inventory (CPUI; Grubs et al., 2010)*. The 9-item CPUI assesses compulsive online pornography and served as an outcome measure of problematic PV. The measure includes three subscales related to harmful, compulsive PV including excessive efforts to view, emotional distress related to viewing, and perceived compulsivity with viewing. Each item is scored on a 7-point scale ranging from 1 “Not at all” to 7 “Extremely;” Items were slightly modified for this study to include any kind of pornography as opposed to only online pornography. The CPUI has been shown to have satisfactory reliability and validity in previous studies (Grubs et al., 2010). In the current study, Cronbach’s alpha for this measure was .76.

*Cognitive and Behavioral Outcomes of Sexual Behavior-Adapted (CBOSB; McBride et al., 2008)*. A modified 10-item version of the CBOSB was included as a primary outcome measure of the negative internal and external consequences of PV. The original 20-item version of the measure assesses a broad range of negative outcomes, including those related to other sexual activities (e.g., sexually transmitted diseases). Thus, an adapted version of the measure was used with only 10-items specifically focused on negative consequences relevant to PV and in the time-frame of the past 2-months (to detect intervention effects). Items are scored on a 6-point scale with responses ranging from “Not at all” to “All the time.” The adapted version of this measure demonstrated satisfactory reliability with a Cronbach’s Alpha of .77.

*Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011)*. The 10-item AAQ-II was used a measure of psychological inflexibility, the primary process of change targeted in ACT. Each item is scored on a 7-point scale with responses ranging from 1 “Never true” to 7 “Always true.” Previous studies have found the AAQ-II to be a reliable and valid measure (Bond et al., 2011) and to be sensitive to the effects of ACT self-help interventions (e.g., Levin et al., 2015). In this study, Cronbach’s alpha for the measure was .85.

*Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014).* The 7-item CFQ was included as an additional ACT process measure of cognitive fusion, a key aspect of psychological inflexibility in which individuals' behaviors are dominantly controlled by their thoughts. Items on the CFQ are rated on a 7-point scale ranging from 1 "Never true" to 7 "always true." The CFQ is relatively new, but preliminary evidence suggests that it is reliable and valid (Gillanders et al., 2014) as well as sensitive to the effects of ACT self-help (e.g., Levin et al., 2017). The Cronbach's alpha for the CFQ was somewhat low in the current study ( $\alpha = .66$ ).

*Quality of Life Scale (QOLS; Burckhardt, Woods, Schultz, & Ziebarth, 1989).* The 16-item QOLS was included as a secondary outcome measure of general quality of life. The QOLS assesses how satisfied people are with the quality of their lives in domains including relationships, employment, health, and recreation. Each item is scored on a 7-point scale, ranging from 7 "Delighted" to 1 "Terrible." The QOLS has been found to have adequate reliability and validity in previous studies (Burckhardt et al., 1989). The Cronbach's alpha for the QOLS in this study was .76.

*Program Acceptability.* A series of questions examined the acceptability of the self-help program at post based on similar items used in other ACT self-help trials (e.g., Levin et al., 2015). Individual items were included to examine features of acceptability (e.g., perceived helpfulness, satisfaction, comprehension, fit). Each item was rated on a 6-point scale from 1 "strongly disagree" to 6 "strongly agree" with a forced-choice format such that a 4 "slightly agree" or higher indicated a positive response. Additional open ended questions were provided to gather qualitative feedback on the program and areas for future revision.

Although the use of a self-help book precluded the ability to automatically track levels of program engagement, participants were asked at post to report what percent of the book they

read and how much time they spent engaging in the self-help intervention per week. Reasons for not engaging in the book were also assessed with a “check all that apply” format listing common reasons (e.g., lack of time, lack of interest).

### **Analyses**

Of the 19 participants who completed baseline, 11 (58%) completed the post assessment and 11 (58%) completed the follow up assessment. Descriptive statistics were examined on program acceptability data reported at post. This included examining self-reported levels of engagement with the book and dimensions of acceptability (e.g., satisfaction, intentions). Open ended responses were also explored and summarized regarding areas to revise the self-help program in the future. Of note, acceptability data was only examined among the 11 participants who completed post, excluding the 8 participants who did not complete post (and may have been more likely to report lower acceptability/engagement).

A series of mixed model repeated measures (MMRM) ANOVAs were then conducted to examine changes over time with the full intent-to-treat (ITT) sample. This method models missing data within analyses, allowing for the inclusion of all 19 participants in analyses. Prior to conducting MMRM, outcome variables were checked for normal distribution. A logarithmic transformation was used on one variable, weekly PV hours, to approximate a normal distribution. MMRM first tested for omnibus time effects from pre to post to follow up. Post hoc analyses were conducted on each significant effect to test for pre to post improvements (suggesting a potential effect of the intervention completed during this time period) and post to follow up changes (whether gains at post were maintained or not).

An additional series of MMRM examined whether participants who were engaged using the book improved more over time by testing time by engagement interactions on each

outcome/process measure. Program engagement was defined as having read half or more of the book ( $n = 5$ ) compared to those who read less than half of the book ( $n = 6$ ). Although there are multiple explanations for such effects in an open trial design, they could provide some further support for the positive impact of the self-help intervention on improvements over time.

## Results

### Was the program acceptable to participants?

Of those who completed the post assessment ( $n = 11$ ), participants reported reading 52% of the book on average ( $SD = 36\%$ ), with 45% reading at least half of the book. Participants reported spending an average of 1.62 hours ( $SD = 1.26$ ) per week on the self-help intervention. When asked why they did not read the entire book, the most frequent reasons given were not having enough time (55%) and lack of interest (27%).

Participants rated the acceptability of the program including perceived helpfulness, comprehension, satisfaction, perceived fit, and intentions to use or recommend the book. Acceptability ratings for each item ranged between 4.27 and 5.00 on a 6-point scale with 4 indicating "slightly agree" (64% to 91% rated "slightly agree" or higher for each item). Overall, these ratings suggest a moderate level of acceptability, with most participants who completed the post indicating being satisfied with it.

### Did participants improve over time using the book?

MMRM analyses tested whether participants improved on each outcome measure from pre to post to follow up. Overall time effects were found for viewing hours, compulsive viewing (CPUI), negative consequences from viewing (CBOSB), and cognitive fusion (CFQ) (See Table 1). Cohen's  $d$  effect sizes ranged between 1.65 and 2.48. Post hoc analyses indicated that all variables improved significantly from pre to post and that there were no significant decreases in

effects from post to follow up. No significant time effects were found for psychological inflexibility (AAQ-II) or quality of life (QOLS). Of note, all participants reported continuing to engage in some degree of PV at post and follow up, although at a lower rate on average (and with fewer negative consequences) over time.

A second series of analyses tested the interaction between engagement with the book and changes over time on outcome and process measures. The sample was split between low engagers (read less than half of the book,  $n = 6$ ) and high engagers (read half or more,  $n = 5$ ). A significant time by engagement interaction was found for negative consequences from PV (CBOSB),  $F(2, 8.22) = 4.73, p = .043$ . The interaction was such that there was a greater pre to post decrease in negative consequences from viewing among high engagers (baseline  $M = 32.00$ , post  $M = 17.82$ ) versus low engagers (baseline  $M = 31.67$ , post  $M = 26.00$ ).

A trending time by engagement interaction was also found for psychological inflexibility (AAQ-II),  $F(2, 8.52) = 3.42, p = .081$ . Again the pattern was such that there was a greater pre to post decrease in psychological inflexibility among high engagers (baseline  $M = 32.20$ , post  $M = 23.60$ ) versus low engagers (baseline  $M = 27.83$ , post  $M = 26.83$ ).

### **What suggestions did participants have for future revisions to the self-help program?**

Open responses from participants at post were reviewed to identify any “lessons learned” and areas for future revisions to an ACT self-help approach. The most common feedback was that the book was too long and/or redundant (45% noted this in free responses). As a note, GOYMIL is 224 pages over 15 chapters. It appears that a future self-help program may benefit from being somewhat shorter to ensure engagement.

The second most common feedback was that the program would benefit from being more tailored to PV specifically. Surprisingly, this was actually only noted by 27% of participants in

open responses, but it does suggest that a self-help program that more specifically discussed and applied ACT concepts to PV would be more acceptable. However, participants generally did not give specific details regarding how the program might be better tailored to PV, although it was noted that at least giving examples of how these skills might apply to PV would be useful.

Additional concerns were noted regarding the book being confusing, difficult to understand, or being too vague. Overall, the findings were somewhat general, but indicated that participants would prefer a shortened self-help book that was more concrete and tailored to PV specifically.

### **Discussions**

This pilot study sought to examine the feasibility of a self-help program for problematic PV, including its acceptability and potential efficacy. Results indicated adequate acceptability by self-report, although engagement was fairly low with only 45% reported reading at least half of the book. Participants improved over time on PV, negative consequences from PV, and ACT processes of change during the course of using the self-help book, with improvements sustaining at 8-week follow up. Furthermore, participants who engaged more in the book appeared to improve more on some dimensions of problematic PV and psychological inflexibility. Overall, these results suggest that an ACT self-help approach for PV is promising and warrants further study.

Although notably limited as a small open trial, this study represents the third outcome study indicating that ACT can reduce PV and its negative consequences. Importantly, and consistent with past studies, participants not only decreased on their rate of PV, but also on the self-reported negative consequences of PV. This is consistent with an ACT perspective in which

the goal is not necessarily to reduce PV or any other behavior per se, but rather to reduce problematic behaviors that are ineffective or otherwise inconsistent with one's values.

That said, surprisingly the results did not demonstrate an improvement in quality of life while reading the book. Ultimately, ACT seeks to help individuals engage in meaningful patterns of activity (i.e., to live a valued life). Thus, it would be expected that quality of life would improve as participants addressed problematic PV and otherwise applied ACT skills to their life. Although there are multiple explanations for a lack of improvement in quality of life in the current study, particularly with an underpowered design, this does raise the question of whether ACT in a self-help format improves quality of life among those struggling with PV.

Another key question with regards to feasibility is whether an ACT self-help program effectively targets the key processes of change in ACT. The primary target of ACT is to reduce psychological inflexibility, which theoretically would lead to improvements across a wide range of areas. Consistent with this, the current study found significant improvements in cognitive fusion over time, a key aspect of psychological inflexibility. Interestingly, the broader measure of psychological inflexibility did not improve. However, this concern is addressed somewhat by the follow up analysis indicating that psychological inflexibility did improve among those who engaged actively with the book. Although there are multiple explanations for such findings, this does provide further support that use of the book specifically is what led to improvements in psychological inflexibility, the primary target in ACT.

Consistent with a feasibility trial design, this study had notable limitations. The use of a within-subjects waitlist design precludes the ability to make clear causal assertions with regards to the potential impact of the self-help program. There are a number of alternate explanations for improvements over time such as regression to the mean, placebo or demand characteristics, and

so on. That said, the finding that those who were more engaged with the book also improved more on key outcome and process measures does provide some additional support for the benefits of the program.

There were limitations with regards to the study sample. First, the study included a small sample, which both limits potential generalizability and raises questions regarding whether significant effects would have been found on quality of life and psychological inflexibility with more adequate statistical power. Furthermore, there were minimal eligibility criteria with regards to PV severity. Although this may reflect an orientation to effectiveness testing with individuals who would seek help for PV, this also led to a potentially less severe sample with regards to PV (for example the average viewing was 1.5 hours a week). Future studies are now needed with larger samples, using clinical cutoffs for inclusion, and with a randomized controlled trial design.

Another notable limitation is that only 55% completed the post and follow up assessments and only 45% reported reading at least half of the book at post. These engagement levels are similar to some other ACT self-help trials in which minimal guidance and incentives were provided to participants for staying engaged (Levin et al., 2015; 2017). These findings are also consistent with typical engagement rates found in unguided web-based self-help interventions (Christensen, Griffiths & Farrer, 2009). Overall, it is unclear what percent of individuals with problematic PV would be willing to engage adequately in a self-help program. It is also unclear whether participants who dropped out engaged in the program or improved on PV outcomes. Yet, it is worth noting that it is not necessary for all individuals to engage in self-help to see benefits from such programs at a public health level. Given the low cost for providing self-help books per individual, even a small portion of individuals showing even small improvements could be relevant at a large scale level for reducing the impact of problematic PV.



Of note, the study also offered an optional mobile app that was freely available for iOS devices. The finding that only one participant regularly used the app raises questions with regards to how engaged individuals struggling with PV might be in using mobile app tools. Alternatively, this may be due to the mobile app being an additional tool that was not well integrated into the main program. In either case, with the current design it is difficult to determine with certainty the degree to which the mobile app influenced results from reading GOYMIL.

Although there were some limitations, the current study indicates that ACT may be effectively implemented in a self-help approach for problematic PV. Such an approach could help expand the reach of therapeutic resources for individuals struggling with PV, overcoming barriers such as lack of access to trained providers and stigma from seeking help. However, further development is needed, with participant feedback suggesting that a briefer and more focused ACT self-help program may lead to higher program engagement and efficacy with problematic PV.

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Table 1. *MMRM results and estimated marginal means at each time point.*

Measure	Pre <i>M</i> ( <i>SE</i> )	Post <i>M</i> ( <i>SE</i> )	Follow-Up <i>M</i> ( <i>SE</i> )	Time <i>F</i>	Cohen's <i>d</i>	Pre to Post Contrast	Post to Follow Up Contrast
Weekly PV Hours	1.51 (.26)	0.90 (0.24)	1.20 (0.27)	7.86**	1.72	3.64**	-1.20
Compulsive PV (CPUI)	42.74 (1.94)	32.14 (2.82)	28.46 (3.84)	8.76**	1.79	4.09**	2.10†
Negative PV Outcomes (CBOSB)	32.53 (1.66)	23.87 (2.51)	25.74 (2.65)	10.70**	2.48	4.48**	-.91
Psych. Inflexibility (AAQ-II)	27.37 (1.86)	22.99 (2.83)	22.26 (3.01)	2.58	.97	-	-
Cognitive Fusion (CFQ)	32.58 (1.17)	25.63 (2.64)	25.50 (2.61)	6.93*	1.65	2.93*	.06
Quality of Life (QOLS)	51.16 (2.59)	48.11 (5.14)	48.86 (5.22)	0.30	.34	-	-

† $p < .10$ , \* $p < .05$ , \*\* $p < .001$ . CPUI = Cyber-Pornography Use Inventory; CBOSB = Cognitive and Behavioral Outcomes of Sexual Behavior Scale; AAQ-II = Acceptance and Action Questionnaire-II; CFQ = Cognitive Fusion Questionnaire; QOLS = Quality of Life Scale.