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“I Smoke Like This to Suppress These Issues that Are Flaws of My Character”: Challenges and Facilitators of Cessation Among Smokers with Bipolar Disorder

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Abstract

Objective—Smokers with bipolar disorder (BD) have low rates of successful quitting, yet no prior studies have evaluated the process of quitting among these smokers in the context of a current quit attempt. To facilitate development of more effective interventions, we conducted a qualitative exploration of challenges and facilitators of quitting in an intervention study for smokers with BD.

Methods—Participants were adult daily smokers with BD ($n = 10$) who completed a 10-week smoking cessation intervention consisting of Acceptance and Commitment Therapy (ACT) and nicotine patch. We administered semi-structured interviews focused on the quitting process at the end of treatment and used inductive content analysis to extract themes.

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Disclosures

Professor Anthenelli's university has received grants from Pfizer and Alkermes. He has provided consulting and advisory board services to Arena Pharmaceuticals, Cerecor and Pfizer. Jonathan Bricker has served as a consultant to GlaxoSmithKline and serves on the advisory board of Chrono Therapeutics. None of the other authors have competing interests to disclose.

Results—Emergent themes representing challenges of quitting included social impediments, lack of awareness, avoidance, maladaptive beliefs, ambivalence, benefits of smoking, and difficulties with nicotine replacement. Themes representing change facilitators included positive treatment effects (ACT-specific, non-specific, and nicotine patch-related), coping behaviors, reasons to quit, changes in self-perception, and social benefits.

Conclusions—Results suggest a need for assistance with obtaining social support and handling social impediments, interrupting the automaticity of smoking, expanding the behavioral repertoire to handle aversive internal states that tend to be avoided by smoking, preventing maladaptive beliefs from interfering with quitting, taking meaningful action toward change while experiencing ambivalence, either replacing the benefits of smoking or accepting their loss, and troubleshooting difficulties with nicotine replacement. Findings regarding facilitators of quitting supported previous quantitative findings that the ACT intervention impacted theory-based targets and highlighted the importance of the counseling relationship.

Keywords

Tobacco cessation; nicotine dependence; bipolar disorder

Introduction

In any given attempt to quit smoking, individuals with major mental health conditions, including bipolar disorder (BD), are at least 20–30% less likely to successfully quit (Anthenelli et al., 2016). Furthermore, an estimated 70% of people with BD have smoked cigarettes and only 16% successfully stop smoking—a quit rate that is 60% lower than smokers without mental health conditions (Lasser et al., 2000). Despite this evidence suggesting that smokers with BD have more difficulty quitting, very few cessation studies have targeted this group (Chengappa et al., 2014; Evins, Cather, Pratt, & et al., 2014; Frye et al., 2013; Heffner, Anthenelli, DelBello, Stahl, & Strakowski, 2013; Heffner, McClure, Mull, Anthenelli, & Bricker, 2015; Weinberger et al., 2008; Wu et al., 2012), and even fewer studies have attempted to gain an in-depth understanding of their quitting experiences. The perceived challenges of quitting for smokers with BD may differ from smokers without mental health conditions (Heffner, Strawn, DelBello, Strakowski, & Anthenelli, 2011; Twyman, Bonevski, Paul, & Bryant, 2014); thus, knowledge regarding this process could facilitate development of more effective interventions for this group.

Only one prior study (Prochaska et al., 2011) focused specifically on understanding factors that impact the quitting process for smokers with BD. This online survey of former and current smokers with BD demonstrated several unique challenges to quitting, including the belief that smoking treats BD symptoms (48%) and that good mental health is a prerequisite for quitting smoking (96%). Such reports, while informative, rely on recall of events from several months to several years prior. Additionally, quantitative findings highlight the magnitude of such barriers and facilitators of quitting smoking. Examinations of the context, process, and experiences of those with BD who are trying to quit are best gathered through qualitative approaches where participants can answer without the imposition of preconceived answer choices.

Although not specific to BD, previous qualitative research has focused on smoking and quitting experiences of people with serious mental illness. Results from these analyses suggest challenges to both initiating and sustaining quit attempts. Specifically, smoking is viewed as a method of mental health symptom management; it is normative among family and friends; it is associated with positive feelings, like enjoyment; motivation and confidence for quitting are low; and smoking provides a sense of belonging and comfort (Clancy, Zwar, & Richmond, 2013; Kerr, Woods, Knussen, Watson, & Hunter, 2013; Lawn, Pols, & Barber, 2002; Lucksted, Dixon, & Sembali, 2000; Solway, 2011). One of these studies reported results separately by diagnosis, providing a small window into the experience of smokers with BD. In that study (Lawn et al., 2002), smokers with BD ($n = 4$) described feeling a strong need to smoke while symptomatic; using cigarettes to regulate sleep, motivation, and mood; smoking as an automatic behavior; smoking as a way of feeling in control; smoking serving a protective function; and hopelessness about quitting.

Given the low quit rates, minimal published data on the quitting process among smokers with BD, and indications from a prior quantitative study that they may experience significant mental health-related barriers to quitting--there remains a need for qualitative research to better understand the challenges and facilitators of quitting in this population. This information could increase the personal relevance and effectiveness of cessation messages for smokers with BD, and possibly for smokers living with other serious mental illness. Additionally, although we reported promising quantitative outcomes from the first pilot study of Acceptance and Commitment Therapy plus Nicotine Replacement Therapy (ACT + NRT) for smokers with bipolar disorder—i.e., high acceptability ratings and an overall quit rate of 38% (6/16) at end of treatment (Heffner et al., 2015)--the manner in which an ACT-based intervention facilitates smoking cessation among smokers with bipolar disorder remains unknown. To address these needs, we analyzed qualitative data from in-depth interviews with treatment completers in the pilot study.

Materials and Methods

Participants

Participants ($n = 10$) were Group Health members who completed treatment in a single-arm pilot trial of ACT and NRT for smoking cessation (Heffner et al., 2015). The total number of participants who received the ACT + NRT treatment protocol was 16 ($n = 10$ as a face-to-face intervention and $n = 6$ via telephone). Inclusion criteria were: (a) age ≥ 18 ; (b) daily smoker, averaging ≥ 10 cigarettes per day for the past 90 days, with expired-breath carbon monoxide (CO) level ≥ 8 ppm; (c) motivated to quit in the next 30 days; (d) met DSM-IV criteria for a diagnosis of bipolar disorder, type I or II; (e) taking BD maintenance medication(s), with no psychiatric hospitalizations for at least three months at the time of screening. Exclusion criteria were: (a) alcohol or other substance dependence in the past month; (b) any medical conditions that would preclude the use of the nicotine patch; (c) currently receiving treatment (medication or counseling) for smoking cessation; and (d) current mania, depression, or suicidal ideation. Due to differences in intervention modality, the psychiatric inclusion/exclusion criteria and methods of establishing them differed between the in-person treatment protocol and the telephone counseling protocol. For the in-

person intervention, the inclusion criteria required participants to be minimally symptomatic on rating scales at the time of screening (i.e., Montgomery-Asberg Depression Rating Scale (Montgomery & Asberg, 1979) score ≤ 12 ; Young Mania Rating Scale (Young, Biggs, Ziegler, & Meyer, 1978) score ≤ 12). For the telephone protocol, potential participants were excluded if they met criteria for a current manic, hypomanic, or depressive episode assessed via the Mini International Neuropsychiatric Inventory (Sheehan et al., 1998). All of these assessments were administered by the first author (JLH), who is a licensed clinical psychologist trained in the use of these instruments. In both protocols, individuals who were at significant risk of suicidal behavior, in the judgment of the first author, were excluded.

Procedures

The treatment protocol included 10 weekly, 30-minute sessions of ACT counseling and an 8-week course of the nicotine patch (4 weeks at 21 mg, 2 weeks at 14 mg, and 2 weeks at 7 mg). The focus of counseling was assisting smokers in identifying the thoughts, feelings, and physical sensations that trigger smoking (i.e., awareness); developing skills to allow cessation-related discomfort to be present without trying to change it (i.e., acceptance); and connecting what is most meaningful in their life to their efforts to quit (i.e., values). Additional details regarding the study procedures are provided in a prior publication (Heffner et al., 2015). All study procedures were reviewed and approved by the Institutional Review Boards of the Fred Hutchinson Cancer Research Center and Group Health and conducted in accordance with the Declaration of Helsinki of 1975. Participants were provided with complete information about the study and given the opportunity to ask questions before providing written informed consent.

Post-Treatment Interviews

Participants who completed the treatment ($n = 10$ of 16 enrolled) were invited to participate in an interview, and all agreed. This included smokers who successfully quit ($n = 6$) as well as those who did not ($n = 4$). In consult with the study team, the lead author developed a semi-structured interview guide designed to assess participants' experience with quitting smoking. These interviews were designed to last 30 minutes. Interview questions are listed in Table 1.

Analytic Methods

Interviews were audio-recorded and transcribed verbatim. In line with an inductive approach (Thomas, 2006), two coders (JLH and NLW) read each transcript and subsequently developed a preliminary list of codes. Both coders were PhD-level clinical psychologists with experience providing smoking cessation treatment, including targeted interventions for smokers with mental health conditions and ACT-based treatments. Using an inductive, conventional content analysis, in which the goal is to describe a phenomenon (Hsieh & Shannon, 2005), the coders collaboratively developed a codebook and definitions corresponding to each code. They applied the codebook across transcripts. If new codes emerged, the revised codebook was applied to previously coded transcripts. Codes were then clustered to determine emergent themes. To improve consistency, six transcripts were reviewed by both coders and discrepancies were resolved through discussion. To ensure

accurate interpretation of quotes, the coders discussed ongoing themes and sought feedback from members of the team throughout analysis.

Results

The average age of participants was 49.0 ($SD = 14.3$). The sample was predominantly female (80%), Caucasian (100%), unmarried (80%), and either disabled or unemployed (60%), with greater than a high school education (70%). On average, they smoked heavily (approximately one pack of cigarettes per day, $M = 19.9$ cigarettes, $SD = 7.5$), and had a high level of nicotine dependence as measured by the Fagerström Test for Nicotine Dependence (FTND, $M = 5.7$, $SD = 1.9$). Half of the participants met criteria for bipolar I disorder and the other half for bipolar II disorder.

Challenges of Smoking Cessation

Barriers to smoking cessation focused on seven central themes, which are summarized in Table 2. Two themes represented external barriers and five were internal barriers.

External barriers

Social impediments: Nine of ten participants mentioned social impediments as challenges to quitting. Participants cited three major types of obstacles: (1) shame or judgment for being unable to quit, (2) others encouraging smoking, and (3) seeing others smoking. Shaming or judgment about being unable to quit took many forms, including a participant's report that, "*When I was talking about quitting there was (sic) a couple of people that were like would verbally basically be like, 'Yeah, right, I'll believe it when I see it.'*" Several participants chose not to tell others about their quit attempt due to concerns about how others would perceive their potential inability to quit. Direct encouragement by others to smoke was illustrated by this participant who said, "*People are just like, 'Dude, if you need to smoke, smoke.'*" Participants also highlighted that being in the physical presence of other smokers or living with other smokers provided an environment that was not conducive to quitting.

Difficulties with nicotine replacement therapy: Two participants mentioned difficulties with nicotine replacement as a challenge to quitting. One participant described a scenario in which they forgot their nicotine patches, evoking a cascade of emotions that further hindered their quit attempt. This participant emphasized, "*It was just a difficult time and without the patches, I've almost felt panicked, in a way.*"

Internal barriers

Lack of awareness: Six participants reported challenges around smoking out of habit or on "autopilot," suggesting a lack of awareness of precipitants of smoking. Demonstrating this theme, one participant relayed, "*I'd been smoking for so many years that there's so many situations where it was extremely automatic for me to smoke.*"

Avoidance: All ten participants described smoking or wanting to smoke to avoid unwanted feelings and thoughts, including urges. One participant described strong urges that

accompanied quitting and the consequent desire to smoke by recalling, “*The first week I felt like every cell in my body wanted a cigarette.*” Other participants said smoking served as a way to address feelings of irritability and fear, as illustrated by a participant who asserted, “*I wasn’t comfortable being by myself on the streets of Seattle and having to walk down the streets and just being kind of very petite and walking through the crowd. I had a cigarette and it would be like my protection.*” Many participants described smoking as a way to calm their negative affect, nervous energy, and internalized shame. Illustrating this theme, a participant related, “*I smoke like this to suppress these issues that are flaws of my character,*” while another participant expressed fear of quitting, because smoking helped remove “*negative thoughts about ‘Oh, I wish I was much better than I was.’*”

Maladaptive beliefs: Eight of ten participant’s highlighted maladaptive beliefs regarding quitting in their comments. Many perceived cigarettes as a part of their identity, such as this participant who reported, “*I guess because the fact that I (sic) been doing it so long and it’s just it’s been an extension of me.*” Participants also described fatalistic and self-doubting beliefs, recalling that “*sometimes I think it’s in my DNA that...everything has been harder for me.*”

Ambivalence: Four participants reported mixed feelings about quitting, either at the beginning of the program (e.g., “*I really didn’t think I was ready to quit when I started...*”) or after encountering difficulties trying to quit.

Benefits of smoking: Six participants reported benefits of smoking that made quitting difficult. For example, some likened cigarettes to “friends” that were difficult to let go. They also described cigarettes as being one of the few constant things in their lives, such as this participant who reported, “*With the bipolar illness it’s hard for me to remember things, but something that I’ve always done is smoke and that’s something that I’ve, you know, it’s just been there all along.*” Others indicated that smoking brought them comfort or improved their self-perception. One participant maintained, “*Sometimes [smoking] makes me feel more intelligent or - quote - grown up, you know, like I’m so sophisticated.*”

Facilitators of Smoking Cessation

—Perceived facilitators of cessation centered around five themes, summarized in Table 2: (1) positive treatment effects (ACT-specific, non-specific, and NRT-related), (2) other coping strategies, (3) reasons to quit, (4) changes in self-perception, and (5) social benefits.

Positive treatment effects: All ten participants identified treatment-related change facilitators. The most commonly cited facilitators of smoking cessation pertained to ACT-specific treatment effects including implementing the ACT skills of acceptance (i.e., non-judgmental allowing) of thoughts, feelings, and urges to be present without acting upon them. One participant contrasted acceptance with distraction strategies she learned in prior smoking cessation programs:

I had never thought to just learn how to be like sitting with it and be comfortable with it and learn that it would pass and that is such a different thought than being

like, ok, I just have to be uncomfortable for a while and it will eventually pass.
[That] is a totally different idea than I just have to distract myself until it passes.

Participants also discussed developing an awareness of triggers and not smoking on autopilot, exemplified by one participant's statement that, "*getting to recognize the triggers, becoming aware of reaching for the cigarettes, that whole process, thinking about cigarettes before you light it, makes it easier to not light it.*" Practicing self-compassion was another way participants used ACT skills:

Before like this program I was so much focused on the idea that I was like denying myself something when I wasn't smoking that I like was missing out and you know, and I think now when I think about it I'm more feel like I'm taking care of myself instead of depriving myself.

Two additional ways that participants implemented ACT skills were psychological distancing from smoking-related thoughts (i.e., defusion) and letting their values guide their behavior in quitting. Regarding values, one participant stated, "*I think it's important to, you know, like have a like a north star like that to look at, like this is why I'm doing it and this is why it's important.*" Non-specific treatment factors cited frequently included the support and accountability of counseling relationship and the effects of NRT.

Other coping strategies: Eight participants described other behaviors that they believed facilitated their quitting experience but were not specifically targeted in the intervention. For example, participants described engaging in alternate activities, avoiding smoking triggers, carefully planning out their quit day, prayer, using (or not using) e-cigarettes, and remembering their desired outcome of quitting.

Reasons to quit: Eight participants described various reasons to quit and stay quit that facilitated their quit attempt, like noticing the cost of smoking as well as the benefits of quitting. One participant stated, "*I think I'm in a much better mood...I am up, I'm confident, I'm sleeping well, my appetite is good, my self-esteem is healthy...I have a brighter outlook, you know.*"

Changes in self-perception: Six participants reported noticing changes in how they thought about themselves as they tried to quit, including developing a non-smoking identity and feeling a greater sense of self-control and self-efficacy. As one participant stated, "*I think I was stronger than I thought I was, because – I honestly didn't think I could quit.*" For one participant, the realization that smoking didn't actually improve his mood as he had believed was beneficial. He relayed, "*I'm every bit as... emotionally stable... whatever I thought I was getting from cigarettes I don't think I was really getting.*"

Social benefits of quitting: Seven participants reported social benefits of quitting. Receiving encouragement and support from others was perceived as helpful. One participant recalled, "*There were some people who were just very, very happy that I was at least trying because I think that some people had kind of given up and there were people who totally didn't believe me but wanted to be supportive.*" Another participant reported wanting to quit

to avoid being judged by others, stating, “*I don’t want to have to deal with people’s negative comments about me smoking because I already feel that in other areas.*”

Discussion

This is the first qualitative examination of perceived challenges and facilitators of quitting among smokers with BD in the context of a current quit attempt and the first assessment of the manner in which ACT facilitates smoking cessation in this group. Regarding the challenges of quitting, the broad themes identified in this study are similar to what one would expect among smokers without a mental health condition. For example, in line with previous findings that social influences predict successful cessation (Fiore et al., 2008), social support was perceived as beneficial to quitting, and negative social influences like seeing others smoke, receiving encouragement to smoke, and anticipating judgment about not being able to quit were identified as challenges. Motives for continued smoking also mirrored many of the previous qualitative findings of smokers with mental health conditions, including smoking to avoid aversive internal states and increase feelings of comfort and protection (Clancy et al., 2013; Kerr et al., 2013; Lucksted et al., 2000; Solway, 2011). There were some indications that the ways in which these challenges manifest can be specific to smokers with BD, such as the perception that cigarettes provide a sense of constancy to counter the mood instability associated with BD. Several participants also made reference to feeling defective in some way, which made quitting more difficult. This internalized shame may reflect, in part, the effects of living with a stigmatized mental illness. These qualitative data support and contextualize previous quantitative research findings that almost half of smokers with BD report smoking to offset symptoms of the disorder (Prochaska et al., 2011). Unless these beliefs are elicited and effectively addressed in the context of a smoking cessation intervention, long-term abstinence is unlikely.

As this was the first study of a targeted ACT intervention for smokers with BD, we were interested to learn whether intervention effects would be apparent in participants’ comments. Prior quantitative findings suggested that the intervention increased acceptance of smoking triggers, a core mechanism of change in ACT-based smoking cessation interventions (Heffner et al., 2015). The current study provides supplemental, qualitative evidence that ACT skills were implemented by participants as intended, as their descriptions of change facilitators were consistent with ACT treatment targets of acceptance, awareness, self-compassion, defusion, and values-guided behavior (Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes, Strosahl, & Wilson, 2011). Participants also highlighted the importance of non-specific factors of accountability and support from the therapist (i.e., intra-treatment support), which is a recognized contributor to positive cessation outcomes (Fiore et al., 2008).

The primary limitations of this study are the small sample size, lack of a control group of smokers without BD, and limited generalizability. Small sample size is a given in qualitative research, yet the limited sample of treatment completers may have prevented us from reaching the goal of thematic saturation--the point at which no new themes are emerging from interviews. Also due to the small sample size, we were unable to conduct thematic comparisons between smokers who quit and those who did not. Without a comparison

group, it is not clear if smokers without mental health conditions or smokers with other forms of serious mental illness would have expressed similar challenges and facilitators. Those who met criteria for the trial, chose to participate in the intervention (including both counseling and nicotine replacement therapy), and completed the treatment and interview may not be representative of all smokers with BD. Finally, the exclusion of participants who dropped out of the study (and were assumed to be continuing smokers) may have impacted our ability to characterize the challenges experienced by non-quitters. Although the results are specific to participants in this study, because of the rigorous methods of data collection and analysis, this study has potential for inferential transferability (Teddlie & Tashakkori, 2003), where the findings are likely applicable in similar contexts such as clinics that treat stable, adult outpatients with BD. In these settings, up to 70% of patients will be smokers (Heffner et al., 2011) and, of those, 50% will be amenable to quitting (Prochaska et al., 2011). Targeted treatments that address the key challenges of quitting could greatly improve their chances of being successful.

This study adds to the literature on smoking and BD in two key ways. First, knowledge of smoking motives and barriers to cessation among individuals with BD, in their own words, provides valuable information for targeting smoking cessation interventions. This preliminary evaluation of participants' experiences suggest a need for assistance with (1) obtaining social support and handling social impediments to quitting, (2) interrupting the automaticity of smoking, (3) expanding the behavioral repertoire to handle aversive internal states that tend to be avoided by smoking, (4) preventing maladaptive beliefs from interfering with quitting, (5) taking meaningful action toward change while experiencing ambivalence, (6) either replacing the benefits of smoking or accepting their loss, and (7) troubleshooting difficulties with NRT, which may have contributed to low adherence to NRT in our two pilot trials (Heffner et al., 2013; Heffner et al., 2015). The results also speak to the acceptability and utility of ACT as a smoking cessation intervention for smokers with BD. ACT's focus on non-judgmental acceptance of aversive internal experiences targets a critical factor that maintains smoking among individuals with BD. Regardless of the treatment approach, these results provide tentative new leads into treatment targets that could improve cessation outcomes and reduce the devastating toll of tobacco use among people with BD.

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Table 1

Post-treatment interview questions

Questions asked of all participants:

- What did you learn over the course of the program? *Probes: About the process of quitting? About yourself?*
- What kind of challenges did you run into while trying to quit smoking? *Probe: How did you deal with them?*
- How did people react when you told them you were going to quit smoking?
- Think back to the last time you can remember having a strong urge to smoke. Describe that for me. *Probes: When was that? Who were you with at the time? What were you doing? How were you feeling? How did you handle the situation?*
- Is there anything that I haven't asked about that you think is important for us to know about the program or about your experience of trying to quit smoking?

Questions asked of quitters only:

- What helped you to quit smoking? *Probe: What was the most important thing that you did during the program to help you meet your goal of quitting?*
- Tell me what the first day without cigarettes was like for you?
- How about the first week without cigarettes? What was that like?
- And what is it like for your now?
- What has changed for you since quitting smoking? *Probes: What has changed for the better? What has changed for the worse? How has quitting affected your mood?*

Questions asked of continuing smokers only:

- Think of the longest period of time in the past 12 weeks that you were able to go without smoking, even if it was only for a few hours. Tell me what that was like. *Probes: How long were you able to go without smoking? What was happening at the time you started smoking again? Who were you with? What were you doing? What were you feeling?*
- What do you think got in the way of quitting completely?
- What would help you to increase the amount of time that you could go without smoking?

Note: Questions marked as probes were optional within the semi-structured interview format.

Table 2

Themes describing challenges and facilitators of quitting

Theme	Brief description of theme	Number of participants who mentioned theme 1 time
<u>Challenges of quitting</u>		
Social impediments	Negative influence of other smokers or feeling shamed/judged for having difficulty quitting	9
Difficulties with NRT	Not having NRT when needed or disliking it	2
Lack of awareness	Automatic, habitual nature of smoking	6
Avoidance	Smoking to change aversive internal states (e.g., emotions, urges)	10
Maladaptive beliefs	Thoughts focused on inability to quit, need for cigarettes, or rationalizing smoking	8
Ambivalence	Mixed feelings about quitting	4
Benefits of smoking	Positive associations with smoking (e.g, comfort, stability, connection)	6
<u>Facilitators of quitting</u>		
Positive treatment effects	ACT-specific or other (e.g., support, accountability) beneficial effects of treatment	10
Other coping strategies	Strategies typically included in standard cessation interventions (e.g., avoid triggers, change thoughts) or strategies of unknown effectiveness (e.g., e-cigarettes)	8
Reasons to quit	Remembering costs of smoking or benefits of quitting	8
Changes in self-perception	Change in smoking identity or perceived control over smoking	6
Social benefits of quitting	Receiving positive support or less judgment from others	7

Note. NRT = Nicotine Replacement Therapy; ACT = Acceptance and Commitment Therapy.