

# Feasibility of a support person intervention to promote smoking cessation treatment use among smokers with mental illness

Kelly A. Aschbrenner,<sup>1</sup> Christi A. Patten,<sup>2</sup> Mary F. Brunette<sup>1</sup>

<sup>1</sup>Department of Psychiatry, Geisel School of Medicine at Dartmouth College, Hanover, NH, USA

<sup>2</sup>Department of Psychiatry and Psychology, Mayo Clinic, Rochester, MN, USA

Correspondence to: KA Aschbrenner, [Kelly.aschbrenner@dartmouth.edu](mailto:Kelly.aschbrenner@dartmouth.edu)

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## Abstract

Social support may be an effective strategy to increase engagement in cessation treatment for smokers with mental illness. The purpose of this pilot study was to assess the feasibility of a support person intervention linking smokers with mental illness to an online smoking cessation decision aid. We conducted a 12-week pilot study of a one-session telephone coaching intervention (“Care2Quit”) to train nonsmoking family members and friends (i.e., support persons) to promote the use of an online cessation decision aid by smokers with mental illness. The primary aim of the study was to assess the feasibility of the support person intervention by examining recruitment, retention, adherence, and participant satisfaction. A secondary aim was to explore changes in the hypothesized mechanism underlying the intervention effect (i.e., cessation support provided) and primary outcome (i.e., smoker use of online cessation decision aid). Seventeen support persons enrolled, of which 94% ( $n = 16$ ) completed the telephone coaching intervention. Eighty-eight percent of support persons rated the intervention as highly acceptable. Self-reported cessation supportive behaviors by the support person increased significantly by 6 weeks post intervention. Forty-one percent of smokers ( $n = 7$ ) linked to support persons used the online cessation decision aid by 12 weeks following the support person’s telephone coaching session. Preliminary results from this study demonstrate the feasibility of a support person intervention to promote the use of smoking cessation treatment among smokers with mental illness. Future research to evaluate the efficacy of the Care2Quit support partner intervention is warranted.

## Keywords

Mental Illness, Smoking, Smoking Cessation Treatment, Social Support, Social Networks

## INTRODUCTION

An estimated 30–60% of adults with serious mental illnesses, including schizophrenia, bipolar disorder, and major depression, regularly smoke cigarettes [1] compared with ~15% of adults in the general population [2]. Many people with mental illness are interested in quitting smoking [3] and want more support for quit attempts from people in their social networks [4]. Family members and friends could be a powerful resource for smokers with mental illness by providing information about programs for quitting, encouraging, and praising progress toward quitting, and reinforcing use of cessation treatment [5]. Smoking cessation

## Implications

**Practice:** A support person intervention to promote the use of smoking cessation treatment among smokers with mental illness is feasible.

**Policy:** Smoking cessation treatments for smokers with mental illness should consider social influences on smoking behaviors and how to leverage social support for quitting.

**Research:** Future research to test the efficacy of support person interventions to promote smoking cessation treatment utilization among smokers with mental illness is warranted.

interventions have yet to systematically target family members and friends as a key component of helping individuals with mental illness quit smoking.

Family members and friends have been shown to have a strong influence on smoking cessation and relapse among smokers in the general population [6]. Intervention strategies that have used peer support or involved family members (e.g., spouses) directly in cessation treatment have had mixed results [7, 8]. One effective approach for leveraging social support for smoking cessation in the general population has been to train nonsmoking family members and friends to link smokers to cessation treatment [9]. This approach intervenes at the level of the support person (and not the smoker) and thus, increases the reach of evidence-based cessation treatment to smokers who may not be actively seeking treatment. Interventions that train support persons to spread information about evidence-based cessation treatments and provide support for smokers to use such treatments may work particularly well among people with mental illness who are often difficult to engage with traditional outreach strategies.

Interventions that have been developed for support persons of smokers in the general population may need to be modified to be effective with

support persons of individuals with mental illness who smoke. Many family members of smokers with mental illness are uncertain about the safety of cessation treatment for people with mental illness [10]. Additionally, family members have expressed beliefs that smoking helps people with mental illness cope with stress in their lives, and some family members are concerned that quitting smoking may make their loved one's mental health symptoms worse [10, 11]. Such beliefs and concerns about smoking and mental illness will likely need to be addressed in order for support persons to effectively promote the use of cessation treatment among individuals with mental illness who smoke.

We modified an evidenced-based intervention originally developed for support persons of smokers in the general population [9] to train nonsmoking family members and friends (i.e., support persons) to link individuals with mental illness who smoke to an evidence-based online smoking cessation decision aid [12]. The modified support person intervention ("Care2Quit") uses evidence-based telephone coaching techniques developed for support persons of smokers in the general population with additional content to address common beliefs and concerns about smoking and mental illness (e.g., tobacco is necessary self-medication, smoking cessation medication is harmful). The specific aim of the current study was to assess the feasibility of Care2Quit by examining recruitment, retention, and adherence issues that would be relevant to a larger trial. A secondary exploratory aim of this pilot study was to explore changes in the hypothesized mechanism underlying the intervention effect (i.e., cessation support provided by support person) and primary outcome (i.e., smoker use of online cessation decision aid).

## MATERIALS AND METHODS

### Participants

Participants were recruited from a state affiliate of the National Alliance on Mental Illness (NAMI), the nation's largest grassroots mental health organization. NAMI reaches millions of families and people affected by mental illness in over 1,000 chapters in all 50 states by raising awareness, educating, and providing support for coping with mental illness. Recruitment occurred over a 4-month period between June and September of 2016. Recruitment advertisements were disseminated through channels routinely used by NAMI to communicate with members, specifically: social media (Facebook, Twitter), electronic communication (e-mail, newsletters, website). The PI and a research assistant also attended NAMI support group meetings at six locations throughout the state to recruit support persons for the study. The study was advertised for family members and friends (i.e., support persons) who were interested in helping a loved one

with mental illness quit smoking. Support persons were told that their smoker did not have to be ready to quit now in order for them to participate in the study. Interested and potentially eligible support persons were asked to contact study staff for more information using a telephone number or e-mail address provided on the recruitment material. A research assistant conducted a telephone screening with support persons who expressed an interest in participating in the study. Verbal consent to participate in the study was obtained from support persons over the telephone following the screening.

Eligibility criteria for support persons were (i)  $\geq 18$  years of age; (ii) never or former smoker (no smoking for  $\geq 3$  months); (iii) interested in supporting a family member or friend who is a current daily tobacco smoker with mental illness (using NAMI's broad definition of mental illness as a condition that affects a person's thinking, feeling or mood, including mood disorders and schizophrenia) and 18 years of age or older; (iv) past 3-month contact of any form with the smoker on  $\geq 1$  days/week; (v) anticipated contact  $\geq 1$  week/month for the 12-week study duration; (vi) access to a working telephone; (vii) access to a computer or smartphone connected to the Internet; and (viii) willing and able to provide verbal informed consent. Individuals were excluded if another individual from the same household had enrolled. A total of 27 individuals were screened by telephone, of which 20 were eligible. Reasons for ineligibility were: support person reported that the smoker they were trying to help consumed less than one cigarette per day (i.e., was not a regular smoker) ( $n = 1$ ); support person reported that smoker did not have a mental illness ( $n = 3$ ); support person reported that smoker they were trying to help was not a family member or friend ( $n = 3$ ). Of the 20 people who were eligible, three were not interested in participating in the study. A total of 17 individuals consented to participate in the study. The Committee for the Protection of Human Subjects at Dartmouth College approved study procedures.

### Design and procedures

After providing verbal informed consent, support persons completed online baseline assessments. They received a single session telephone intervention, and were encouraged to link their loved one to a free online decision aid for smoking cessation for people with mental illness [12], which was available for 12 weeks. The support person completed online assessments at 6-week follow-up. Smoker's use of the online smoking cessation decision aid was monitored for 12 weeks after the support person's enrollment in the study. Support persons were compensated \$20 for participating in each assessment for a total of \$40.

### Support person intervention

The Care2Quit intervention is based on a one-session telephone coaching intervention developed for support persons of smokers in the general population by Patten et al. [13, 14]. Topics covered in the manualized intervention include rationale for cessation treatment, the role of the support person, education on readiness to quit, supportive behaviors (verbal and nonverbal) based on the smoker's readiness to change, and how to reinforce (shape) progress made by the smoker. The types of supportive behaviors taught to participants include instrumental (e.g., providing material aid), informational (e.g., sharing relevant treatment information), and emotional (e.g., expressing empathy and reassurance). Participants are also taught to increase positive support (e.g., encouragement) while decreasing negative behaviors (e.g., nagging). Prior to the telephone coaching call, materials covering tips and strategies for helping a loved one with mental illness quit smoking were mailed to support persons. Support persons were also mailed a card with a code for accessing the online cessation decision aid to give to their smoker.

Content was added to the original support person intervention manual to address common beliefs and concerns about smoking and mental illness (e.g., tobacco is necessary self-medication, smoking cessation medication is harmful). The decision to modify the support person intervention content was informed by the literature documenting prevailing myths and concerns that have likely contributed to tobacco use among people with mental illness [10, 11, 15], and based on informal conversations with NAMI leaders and family members of persons with mental illness regarding their beliefs and concerns about smoking and cessation treatment. The original evidence-based coaching techniques used in the support person intervention were not substantially modified during this process.

### Online cessation decision aid for smokers

The primary goal of the Care2Quit intervention was for support persons to link their smoker to a free evidence-based online smoking cessation decision aid for smokers with mental illness [16]. The decision aid has an interface design tailored for ease of use for people with even the most severe mental illnesses (i.e., schizophrenia) [17, 18]. The program uses motivational interviewing techniques for smoking cessation and targets motivation to quit and use of evidence-based cessation treatment [12]. The decision aid has consistently engaged 30%–50% of users into evidence-based cessation treatment [12, 19]. The materials mailed to support persons prior to their telephone coaching session included a laminated card with a study-specific code linked to the support person study ID number that their smoker could use for up to 12 weeks. Smokers were not required to enroll in the study to use the online

smoking cessation decision aid. We tracked smoker use of the online aid by monitoring which codes were entered in the online program during the 12-week study period.

A lifestyle coach was trained to deliver the support person intervention. The coach had a 4-year college degree in a behavioral health-related field. The coach was provided with 8 hrs of training on the written coaching manual used in the intervention and documentation procedures. Training was done using didactics, role-plays, and simulated coaching sessions. Training emphasized the importance of following the coaching manual and covered specific strategies for keeping the conversation focused on the content presented in the manual. The PI provided once weekly 1-hr supervision to the coach to address concerns and questions as they arose throughout the study.

### Measures

#### *Demographics and tobacco history*

Support person participants reported their demographic and tobacco use characteristics. They also reported the age, gender, race/ethnicity, tobacco use and quit history, and mental illness diagnosis of the smoker they were trying to help in the program, and that smoker's readiness to quit smoking using the 11-point Contemplation Ladder adapted for proxies [13] with anchors ranging from (0) having no thoughts of quitting to (10) taking action to quit [20].

#### Primary aim

##### *Feasibility*

The assessment of feasibility included a process evaluation of recruitment, retention, and adherence issues. The evaluation focused on enrollment barriers specific to the study, challenges to implementing the telephone coaching call, and retaining support persons in the study. At the end of the study, support persons completed a nine-item intervention usability and satisfaction questionnaire designed to measure satisfaction, usefulness, ease of use, and ease of learning. The questionnaire included open-ended questions to elicit what participants liked the most and least about the support person intervention. The questionnaire has been used in previous pilot studies (including studies with support persons of individuals with mental illness) to assess feasibility during intervention development [21, 22].

#### Exploratory aims

##### *Perceived support provided measure*

Support persons completed the 22-item Support Provided Measure (SPM) at the baseline and 6-week follow-up assessments. The SPM assesses whether smoking-specific supportive behaviors occurred from the perspective of the support person [23]. Eleven of the items ask about positive supportive

behaviors (“praised or encouraged your partner for his/her efforts to quit smoking?”) and 11 of the items assess negative behaviors (“attempted to hide or keep cigarettes away from your partner?”). Respondents indicated if each behavior occurred (i.e., “Yes” or “No”) over the past 2-week period. The total score is calculated by summing the number of items endorsed in the direction of supportive behaviors and can range from 0 to 22. The SPM demonstrated high internal consistency ( $\alpha = 0.74$ ) in a prior study [24].

#### *Smoker use of online cessation decision aid*

The proportion of smokers linked to the support person participants who used the online smoking cessation decision aid from enrollment to 12-week follow-up was documented by monitoring time-stamped user logins to the study specific website. Data collected were if the aid was used or not. No other information was collected from the smokers.

#### Data analysis

Statistical analyses were performed using SPSS software, version 22.0. Descriptive statistics, including means and frequencies, were used to summarize demographic and background information and participant satisfaction ratings. Paired sample *t*-tests were used to test differences between the baseline scores and the post-treatment scores on the SPM. This analysis enabled us to explore whether there were changes in the hypothesized mechanism of action (i.e., perceived cessation support provided) over the study period. We also calculated the proportion of smokers linked to support persons who used the online smoking cessation decision aid.

## RESULTS

Seventeen support persons enrolled in the study. The baseline characteristics of support persons and the smokers they were supporting in the program are shown in Table 1. The majority of support persons (59%) were mothers trying to help an adult child with schizophrenia quit smoking. Thirty-five percent of smokers ( $n = 6$ ) lived with support persons, while 53% ( $n = 9$ ) had face-to-face contact nearly every day and 94% ( $n = 16$ ) had face-to-face contact at least once per week. Seventy-one percent ( $n = 12$ ) of support persons had tried to help their loved one quit smoking at least once. Support persons reported that 12% ( $n = 2$ ) of smokers had attempted to quit smoking in the 2 months prior to the study.

#### Feasibility evaluation

Twenty-seven potential participants were self-referred and screened for the study over a 4-month period. During the first month of recruitment, the study was advertised online through a NAMI electronic newsletter and Facebook group. This online-only approach to recruitment yielded only a few

**Table 1** | Baseline characteristics of support persons and the smokers they were supporting in the Care2Quit Intervention

Characteristic	Support persons ( $N = 17$ )
Age (years; $M \pm SD$ )	61 (9.2)
Range	44–79
Gender	
Female	15 (88%)
Male	2 (12%)
Race	
Caucasian	17 (100%)
Other	0 (0%)
Married	14 (82%)
Highest level of education	
High school/GED	3 (18%)
Associate degree	3 (18%)
College degree	7 (41%)
Postgraduate degree	4 (23%)
Employed	
Full-time	9 (52%)
Part-time	3 (18%)
Not currently employed	3 (18%)
Retired	2 (12%)
Tobacco use	
Never	8 (47%)
Former smoker	6 (35%)
Experimented	3 (18%)
Prior attempts to help smoker quit	
Never	5 (29%)
Once	4 (24%)
Two or more times	8 (47%)
Smoking specific support provided ( $M \pm SD$ )	10 ± 1.9
Range	5–13
Relationship to smoker (S/he is my...)	
Child	12 (70%)
Spouse/partner	2 (12%)
Sibling	2 (12%)
Grandchild	1 (6%)
Currently lives with smoker	6 (35%)
Amount of face to face contact with smoker	
Daily	9 (53%)
At least once per week	7 (41%)
At least once per month	1 (6%)
	Smokers ( $N = 17$ )
Gender of smoker	
Female	2 (12%)
Male	15 (88%)
Age (years) of smoker ( $M \pm SD$ )	37.94 ± 13.5
Range	22–62
Race of smoker	
Caucasian	15 (88%)
Other	2 (12%)
Psychiatric diagnosis	

(Continued)

Table 1

Characteristic	Support persons ( <i>N</i> = 17)
Schizophrenia	10 (58%)
Major depression	1 (6%)
Bipolar disorder	3 (18%)
PTSD	2 (12%)
Anxiety disorder	1 (6%)
Contemplation Ladder score ( <i>M</i> ± <i>SD</i> )	3.06 ± 1.9
0–3 (low)	8 (47%)
4–6 (medium)	8 (47%)
7–10 (high)	1 (6%)
Quit attempt in past 2 months	2 (12%)

participants during the first 6 weeks of the study. In an attempt to increase study referrals, the PI reached out to NAMI support group facilitators who suggested she present the study to NAMI members at regularly held support group meetings. The PI presented the study at six NAMI support group meetings held at different locations across the state. The presentation included a 10-min overview of the study. The PI answered questions about the study and addressed concerns members had about helping a loved one with mental illness quit smoking. This recruitment strategy yielded the majority of referrals to the support person intervention.

All 17 of the support persons who enrolled in the study completed the telephone coaching session and 94% (*n* = 16) of support persons completed the postintervention assessments. The telephone coaching sessions were 35.7 ± 10.2 min in length, (range 23–60 min). The results of the participant satisfaction questionnaire are presented in Table 2 with key quotes from the open-ended questions summarized in Table 3. Eighty-eight percent (*n* = 14) of participants rated the intervention as highly acceptable and usable. Support persons reported that the Care2Quit

intervention strengthened their relationship with their loved one who smokes and increased their self-efficacy to help their loved one quit. Suggested improvements to the intervention included follow-up reminders and encouragement to apply skills from the coaching session to encourage their smoker to use the online cessation decision aid.

#### Exploratory aims

Smoking-specific supportive behaviors by support persons significantly increased over the period of the study;  $t(-4.64)$ ,  $p < .001$ . By 12-weeks post intervention, 41% (*n* = 7) of the smokers associated with support persons used the online smoking cessation decision aid. Among the smokers with mental illness who used the online smoking cessation decision aid, readiness to change was low or medium. Twenty-five percent (*n* = 4) of support persons indicated that the smoker they were trying to help had tried to quit smoking at least once during the 3-month period since they participated in the telephone coaching session.

#### DISCUSSION

This pilot investigation found that a support person intervention linking individuals with mental illness to an online smoking cessation decision aid was feasible with minor modifications to recruitment. Recruiters may be more effective if they are able to answer questions about the study, address concerns about cessation treatment, and build rapport with potential support person participants. A secondary aim of the study was to explore changes in the hypothesized mechanism underlying the intervention effect (i.e., cessation support by support person) and primary outcome (i.e., smoker use of online smoking cessation decision aid). Self-reported cessation-specific supportive behaviors by support persons significantly increased over the study period.

Table 2 | Participation satisfaction questionnaire results (*N* = 16)

Question	Agree, <i>N</i> (%)	Neither agree nor disagree, <i>N</i> (%)	Disagree, <i>N</i> (%)
“The telephone coaching tips and strategies were easy to understand.” <sup>a</sup>	14 (88)	2 (13)	0 (0)
“The telephone coaching tips and strategies were complicated.” <sup>a</sup>	0 (0)	2 (13)	14 (88)
“Most people would be able to learn how to use the tips and strategies quickly.” <sup>a</sup>	14 (88)	2 (13)	0 (0)
“I felt very confident using the coaching tips and strategies.”	12 (75)	4 (25)	0 (0)
“The program was convenient for me to use.”	13 (81)	2 (13)	1 (6)
“The materials I received in the mail were easy to understand.”	14 (88)	1 (6)	1 (6)
“The materials I received in the mail were helpful.”	15 (94)	1 (6)	0 (0)
“Overall, I am satisfied with the telephone coaching program.” <sup>a</sup>	14 (88)	2 (13)	0 (0)
“I would recommend this program to other people who needed it.”	16 (100)	0 (0)	0 (0)

<sup>a</sup>Breakdowns total 101% because of rounding.

Table 3 | Key Quotes from open-ended questions

Open-ended question	Support person response
“What did you like most about the program?”	<ul style="list-style-type: none"> <li>•“There are good ideas in the pamphlet; it’s very thorough.”</li> <li>•“I stopped being a nag and instead worked with encouragement.”</li> <li>•“I liked that it was personal. Perhaps because it was one on one, it felt like it was more tailored to myself and my smoker.”</li> <li>•“Not to be negative if the person does not want to quit.”</li> <li>•“Flexibility, and ability to use program often and over extended period of time.”</li> <li>•“Got rid of myths of people with mental illness who smoke, that they actually can stop smoking with no increase in their symptoms.”</li> <li>•“I liked the fact that I was able to sponsor a loved one but I also like the fact that he is able to do this program on his own without my nagging him or checking up on him.”</li> <li>•“The positive nature of the suggested actions. I like the idea that I can strengthen my relationship with my son (e.g. by asking him how I can help him, and doing things with him) while supporting his attempts to quit smoking. I like moving away from smoking being something that comes between us and weakens our relationship.”</li> </ul>
“What did you like least about the program?”	<ul style="list-style-type: none"> <li>•“It was hard to schedule because there is a lot of drama in my life.”</li> <li>•“I felt the program was well developed. I would have liked to have included more smokers I know.”</li> <li>•“That my son and I can not use the internet program after three months.”</li> <li>•“I wish the online piece stayed available so that if my son decided at a later point to finally check it out, it’d be open.”</li> <li>•“Program I felt was great! Unfortunately, not my loved one. He does not go to group any longer. He states I already know everything I have to do, but I ask him why don’t you try to do it. He says I just don’t want to. I feel he has no motivation and that is an important part for loved ones with mental illness I feel.”</li> <li>•“Making time in my busy schedule to do the program.”</li> <li>•“Not enough contact, not any more info for the support person, no follow-up of things discussed on phone - that would have been a supportive reminder.”</li> </ul>
“Overall, what did you think of the telephone program?”	<ul style="list-style-type: none"> <li>•“It was a very helpful forum for confirming positive strategies and being reminded that negative strategies are counter-productive.”</li> <li>•“It was good but you have to be in continual contact with the loved one. My son doesn’t live with me and he was going through difficulties so he was not in a good place to try to quit. He has to be ready and he wasn’t.”</li> <li>•“The coach was nice, but too long a period in between contacts - so really out of sight out of mind.”</li> <li>•“I felt the coaching was very informative. It gave me suggestions I had not thought of.”</li> </ul>

Forty-one percent of smokers linked to support persons used the online cessation decision aid. Results from this pilot study indicate the promise of a support person intervention as a strategy to engage smokers with mental illness in cessation treatment.

Mobile interventions that involve education, problem-solving training, and social support have been shown to increase support person self-efficacy and skills to provide more effective support for complex health conditions and behaviors, including eating disorders [25], chronic disease care [26], medication adherence [27], and smoking in the general population [13]. After one telephone coaching session, the majority of support persons in this study felt very confident using the coaching tips and strategies taught in the program. Several support persons felt they would have benefited from follow-up contact and reminders from the Care2Quit coach following the coaching session. Future modifications to the Care2Quit intervention could include the use of social media and text messaging to provide support persons with ongoing encouragement to apply the supportive behaviors they learned during the coaching session while maintaining the scalable design of the intervention.

The Care2Quit intervention reached smokers with low-to-moderate levels of readiness to quit smoking as reported by their support person. In previous studies, clinicians have delivered motivational interventions to effectively engage smokers with low readiness to change [28, 29]. Training family members and friends of individuals with mental illness to provide cessation-specific support represents a broad, population health approach to engage individuals with mental illness who smoke in evidence-based cessation treatment whether or not they are currently seeking treatment. Partnering with national mental health advocacy and support organizations to provide such interventions has the potential to achieve significant reach and impact. This pilot study has laid the groundwork for a larger trial evaluating the effectiveness of implementing Care2Quit within the NAMI network.

An important finding related to the feasibility of the study and intervention was that most referrals were generated when the research team was able to answer questions about the study, address concerns about cessation treatment, and build rapport with potential support person participants. It may be necessary when implementing a study of a support

person intervention for smokers with mental illness to include in person recruitment strategies. A recent survey of family members' beliefs and attitudes about smoking and mental illness revealed that many family members of smokers with mental illness are uncertain about the safety of cessation treatment for individuals with mental illness [10]. All of the support persons recruited for the present study from a NAMI state affiliate were family members of individuals with mental illness who smoked. One effective approach to recruitment may be to train family support group facilitators who have existing rapport with members to disseminate information about the study and answer questions and address concerns to help facilitate referrals.

A primary goal of the Care2Quit intervention was for support persons to give their smoker an access card to use a free online smoking cessation decision aid and encourage him or her to use it. The online cessation decision aid has been recently expanded to include behavioral cessation treatment [30] so that users who become motivated to quit can immediately access cessation treatment. Behavioral strategies for quitting smoking taught in the program include strategies to cope with urges to smoke, manage withdrawal, use nicotine replacement therapy, and cope with stress without smoking. Future research to test the efficacy of the Care2Quit support person intervention will include the expanded version of the online decision aid that includes behavioral cessation treatment to increase the reach of cessation treatment for individuals with mental illness who smoke.

Findings from this initial pilot study should be interpreted with caution in light of several limitations. First, we studied a small group of self-selected volunteers who were family members of individuals with mental illness recruited through NAMI in a single state. The results reported here may not necessarily be generalizable to support persons of smokers with mental illness who smoke who are not affiliated with NAMI or to support persons in different regions with different cultural, racial, and ethnic identities. Second, we relied on support person reports that the smoker they were trying to help in the program was an individual with a diagnosed mental illness. Since support persons were recruited from the NAMI network it is likely that they were indeed trying to help a smoker with a mental illness; however, it may be possible that the type of psychiatric condition reported by the support person was inaccurate. Support persons also provided information on the smoker's background and tobacco use and quit history. The research team was able to objectively assess whether the online smoking cessation decision aid was used during the study period without relying on reports from support persons. Third, this pilot study was not designed to test an efficacy hypothesis; rather, it was designed as an

initial step to explore the feasibility and potential benefits of a novel intervention [31, 32]. Future studies with larger sample sizes drawing from diverse communities using randomized designs are needed to evaluate the efficacy of support person interventions in improving engagement in evidence-based smoking cessation treatment among individuals with mental illness who smoke.

## CONCLUSIONS

New intervention strategies are needed to engage individuals with mental illness who smoke into evidence-based smoking cessation treatment. Family members and friends could be a powerful resource for individuals with mental illness who smoke by providing information about programs for quitting, encouraging and praising progress toward quitting, and reinforcing treatment utilization. Preliminary results from the current pilot study demonstrate the feasibility of a telephone coaching intervention to train support persons of individuals with mental illness who smoke to promote the use of an online smoking cessation decision aid. There is potential for increasing the reach of smoking cessation treatment for people with mental illness who smoke by targeting increased cessation support from family members. Future research to test the efficacy of the Care2Quit support person intervention is warranted.

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## Compliance with Ethical Standards

**Conflict of Interest:** All authors declare no conflicts of interest.

**Primary Data:** This paper is not under consideration elsewhere, and neither it nor any part of its content has been published or been accepted by another journal. The authors of this manuscript have full control of all primary data and agree to allow the journal to review their data if requested.

**Ethical Approval:** All procedures performed in studies involving human participants were in accordance with the ethical standards of the Dartmouth College Committee for the Protection of Human Subjects and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

**Informed Consent:** Informed consent was obtained from all individual participants included in the study.

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