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Conducting online focus groups on Facebook to inform health behavior change interventions: Two case studies and lessons learned

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ABSTRACT

Background: Online social media offer great potential for research participant recruitment and data collection. We conducted synchronous (real-time) online focus groups (OFGs) through Facebook with the target population of young adult substance users to inform development of Facebook health behavior change interventions. In this paper we report methods and lessons learned for future studies.
Methods: In the context of two research studies participants were recruited through Facebook and assigned to one of five 90-min private Facebook OFGs. Study 1 recruited for two OFGs with young adult sexual and/or gender minority (SGM) smokers (range: 9 to 18 participants per group); Study 2 recruited for three groups of young adult smokers who also engage in risky drinking (range: 5 to 11 participants per group).
Results: Over a period of 11 (Study 1) and 22 days (Study 2), respectively, we recruited, assessed eligibility, collected baseline data, and assigned a diverse sample of participants from all over the US to Facebook groups. For Study 1, 27 of 35 (77%) participants invited attended the OFGs and 25 of 32 (78%) for Study 2. Participants in Study 1 contributed an average of 30.9 (SD = 8.9) comments with an average word count of 20.1 (SD = 21.7) words, and 36.0 (SD = 12.3) comments with 11.9 (SD = 13.5) words on average in Study 2. Participants generally provided positive feedback on the study procedures.
Conclusions: Facebook can be a feasible and efficient medium to conduct synchronous OFGs with young adults. This data collection strategy has the potential to inform health behavior change intervention development.

1. Introduction

An increasing amount of time in people's everyday life is spent on social media. In the United States, 90% of young adults have a social media account (Perrin, 2015). Facebook is used by 72% of online adults, 70% of US Facebook users access the site daily, and 43% several times a day (Duggan, 2015). Facebook is a useful tool for research study participant recruitment (Frandsen et al., 2014; Ramo et al., 2014; Ramo and Prochaska, 2012; Topolovec-Vranic and Natarajan, 2016) and offers great potential as a data collection tool in a variety of studies.

Focus groups are qualitative designs to gather participant insight on shared or individual perspectives around specific topics and are common in medical research (Kitzinger, 1995). Lately, focus groups have been used to inform the development of digital interventions, including an online intervention to support parents in changing their children's health behavior (Avis et al., 2015). Advantages of focus groups include their ability to explore participants' knowledge and experiences in an open-ended format, capitalizing on group dynamics and interpersonal communication (Kitzinger, 1995).

Given the ubiquity of the Internet, the use of online focus groups (OFGs) has become a new method of data collection (O'Connor and Madge, 2003; Reid and Reid, 2005). OFGs provide participants an opportunity to share information that they might not feel comfortable sharing in person (Stancanelli, 2010; Wettergren et al., 2016). Additional advantages of OFGs include the potential to engage in research with difficult to reach populations, and the comfort to participate from a convenient location without the need to travel (Woodyatt et al., 2016). A recent study comparing OFGs to in-person focus groups concluded that OFGs have the potential to produce a similar number of emerging themes and may be advantageous when discussing sensitive topics, supporting the data quality generated from OFGs (Woodyatt et al., 2016).

There are two types of OFGs: synchronous and asynchronous groups (Watson and Newby, 2013). Synchronous groups are conducted as a real-time discussion. Asynchronous OFGs use listservs or discussion forums (Tuttas, 2015) that allow participants to respond at their own pace (Rolls et al., 2016). In comparison to asynchronous OFGs, synchronous OFGs have the advantage that they closely mimic the real-

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time conversations of in-person groups (Smithson, 2008) and are considered more dynamic and immediate, leading to a greater expression of emotion (Fox et al., 2007). Previous studies have used technologies including specifically created online forums (Fox et al., 2007), websites (Watson et al., 2006), or chat programs (Wettergren et al., 2016), as well as web conference software (Tuttas, 2015; Woodyatt et al., 2016) to conduct OFGs. However, potential limitations of using these technological approaches are that participants may not be familiar with the technology to be used or may be hesitant to download new software, sign up for, or generate a new user profile on an unknown platform.

Online social media offer an opportunity to conduct OFGs both synchronously and asynchronously using a technology platform that research participants are already familiar with. Recent studies have leveraged "secret" (entirely private) Facebook groups to conduct OFG research with people with rare diseases (MacLeod et al., 2016) or children moving across boarders as their parents are sent abroad on overseas assignments (Lijadi and Schalkwyk, 2015). However, all of these Facebook OFG studies have conducted asynchronous groups and there is a lack of research on whether Facebook can be used to conduct synchronous OFGs. Facebook is well suited to conduct synchronous OFGs for several reasons: 1) Participants with an account are familiar with using the platform; 2) The interface is optimized to facilitate communication, with comment functions and the possibility to comment on comments (comment response) for further exploration of responses; 3) Facebook has features to notify participants when new content is posted in OFGs; 4) Individual participants can be tagged in comments to receive additional notifications; and finally 5) The Facebook secret groups allow for a high degree of privacy as only invited persons are able to participate and content is only visible to group members.

Our group has a research program developing and testing smoking cessation interventions for Facebook delivery (Ramo et al., 2015b, 2015c; Thrul et al., 2015). The Tobacco Status Project (TSP) is a 90-day intervention through Facebook secret groups, combining study-led posts, tailored to readiness to quit smoking, and live counseling sessions. In an effort to address disparities in smoking prevalence among people who identify as sexual and/or gender minorities (SGM) (Blosnich et al., 2014; Conron et al., 2010; Institute of Medicine (US) Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities, 2011) and an absence of interventions tailored for this population (Cochran, 2001; Hicks, 2000; Marshal et al., 2008), we aimed to adapt the TSP to best serve SGM young adults. In a parallel effort, we aimed to develop an intervention to simultaneously address smoking and heavy drinking (TSP + ALC), common and detrimental among young adults (Center for Behavioral Health Statistics and Quality, 2015; Moss et al., 2014; Quek et al., 2013).

In both efforts to adapt the TSP (SGM adaptation and TSP + ALC adaptation) we conducted synchronous OFGs through Facebook to inform intervention development and delivery. Herein we report on the methodology used and report successful strategies and lessons learned.

2. Methods

2.1. Study 1: SGM adaptation

2.1.1. Recruitment

Building on our previous experience of recruiting research participants through Facebook advertisements (Ramo et al., 2014, 2015c; Ramo and Prochaska, 2012), we developed a campaign that targeted a SGM and smoking audience of young adults ages 18–25 living in the United States. Two ad sets were administered from 06/20/2016–06/30/2016. The advertising budget started at $50 daily with adjustments based on cost-effectiveness (cost per click) and success of individual ads (Facebook Relevance Score – score provided by Facebook to reflect how well the target audience is responding to the advertisement) (Facebook Business, 2017).

After clicking on an ad, participants were directed to an eligibility survey with the following inclusion criteria: read English; between 18 and 25 years of age; valid US zip code; identified as SGM; use Facebook ≥ 4 days per week; have smoked ≥ 100 cigarettes lifetime and currently smoke ≥ 1 cigarette per day on ≥ 4 days per week; and availability to meet at one of two times on Facebook. Eligible participants digitally consent to participate in the OFGs by answering three questions correctly. Finally, all participants were asked to become friends with the study on Facebook (in order to confirm their identity). If participants were found eligible, properly consent, and "friended" us on Facebook, they were sent a link to a baseline survey with assessment of demographics, smoking history, current smoking patterns, sample Facebook posts that participants were asked to rate for likability and perceived helpfulness. Residential zip codes were used to categorize participants as residing in (1) one of the four US census regions: Northeast, Midwest, South, and West and (2) an urban or rural area, using data from 2010 US census urban and rural classification.

2.1.2. Facebook OFG procedures

A focus group guide was drafted based on that used for individual interviews in developing the TSP (Ramo et al., 2015a). The guide was modified to address study aims (i.e., to inform the development of an intervention for SGM young adults), with sections addressing SGM identity, smoking, social media use, and specific questions regarding intervention development. Two consultants with expertise in qualitative research provided feedback on drafts of the guide. We conducted internal pilot testing of the guide by conducting two focus group sessions among our team. The guide was iteratively refined to best fit Facebook: We reduced text of the questions, made changes to the content, and logistical changes (e.g., we numbered each post to improve clarity for both moderators and participants). The final version of the guide contained 35 questions including a mix of story type questions (e.g., coming out experience) and simple questions (e.g., social media use).

Two secret groups were created on Facebook – one for each of two dates and times. Upon completion of the online survey, participants were invited to the group that best fit their availability. A Facebook event, created for both of the secret groups, invited each of the participants to the OFG discussion. Each OFG lasted 90 min and allowed participants to comment on and respond to posts. Participants used their existing Facebook profiles and members of each secret group were able to see each other's name and thumbnail of their profile picture.

Two moderators with previous experience in qualitative study design were administrators of each of the secret groups. Moderator 1 was responsible for posting content of the focus group guide, while Moderator 2 was responsible for asking follow-up questions and encouraging participants to elaborate on specific responses. During each OFG, additional staff members were actively monitoring the groups, reading through participant responses, drawing moderators' attention to specific responses, and tracking who was in the group. OFG posts were made by Moderator 1 in order of post number (1 to 34), with several minutes between posts so as not to overwhelm participants. In general, each question was posted once several participants had commented on the previous question.

Once the 90-min OFG was completed, participants were counted, identified, and sent an Amazon gift card for $25. Any participant who did not attend was removed from the secret Facebook group and active participants were allowed to respond to any of our questions for the next two days (only 5% of all responses were posted in this grace period after the end of the OFG).

2.2. Study 2: TSP + ALC adaptation

2.2.1. Recruitment

Recruitment procedure for Study 2 deviated only slightly from that

of Study 1. The population included young adults aged 18–25 who smoked and engaged in heavy episodic drinking (HED). In this study, four ad sets were administered from 09/13/2016–10/04/2016.

Similar process/structure as Study 1 was followed as the participants clicked one of our advertisements. An additional eligibility criterion for Study 2 included having at least one HED episode (4 + drinks for women, 5 + drinks for men) in the past month, and there was no criterion that participants identify as SGM. Lastly, the baseline survey also included questions on alcohol history and drinking patterns.

2.2.2. Facebook OFG procedures

OFG procedures for the TSP + ALC adaptation were again similar to those of Study 1. The focus group guide additionally included sections addressing alcohol use and combined tobacco/alcohol use. The final version of focus group guide included 43 questions in the same format as Study 1. For this study, three secret groups were created on Facebook – one for each of three dates and times. The OFGs were conducted in a similar fashion as Study 1. After the completion of each 90-min OFG, participants for this study were sent an Amazon gift card for $20.

Procedures of both studies were approved by the UCSF Institutional Review Board.

3. Results

3.1. Study 1: SGM adaptation

3.1.1. Recruitment and participant characteristics

The Facebook ad campaign spent $761.25 over 11 days to yield 2245 clicks, with costs per click ranging from $0.17–$0.71. A total of 98 individuals were found eligible, 62 signed consent, and 49 provided contact information. Of these, 35 completed the baseline assessment and were assigned to secret Facebook groups. Our recruitment strategy in this study resulted in costs of $21.75 for each participant getting assigned to Facebook groups.

In Group 1, 64% of those invited (9 of 14) were in attendance at the start of the group. The five people who were invited but did not attend Group 1 were invited to Group 2 for a total of 26 invitees. Of those invited 69% (18 of 26) attended Group 2, for a total attendance of 27 participants in both groups. Characteristics of all participants attending Study 1 can be found in Table 1. There were no significant differences between participants attending and not attending the groups on any baseline characteristics.

3.1.2. OFG engagement

OFG engagement, including number of posts, comments, comment responses, and word counts for Study 1 is presented in Table 2. Of all participants, 22.2% in each of the two groups responded to all 34 numbered questions. There were few differences in participant response behavior between groups. The average number of comments by participant was 25.5 (SD = 12.6) for Group 1 and 33.6 (SD = 4.7) for Group 2. The word count per participant comment was 21.2 (SD = 19.2) for Group 1 and 19.6 (SD = 22.5) for Group 2. Thus, while Group 1 contributed fewer comments per participant than Group 2, the length of comments was slightly greater than comments in Group 2.

3.2. Study 2: TSP + ALC adaptation

3.2.1. Recruitment and participant characteristics

The Facebook ad campaign spent $1159 over 22 days to yield 7360 clicks, with costs per click ranging from $0.11–$0.24. A total of 269 individuals were found eligible, 122 signed consent, and 78 provided contact information. Out of these, 37 completed the baseline survey and were added to the secret Facebook groups. Overall, this recruitment strategy resulted in costs of $31.32 for each participant getting assigned to Facebook groups.

In Group 1, 100% of those invited (5 out of 5) were in attendance at

Table 1
Participant characteristics for both included studies.

	Study 1, SGM adaptation $N = 27$		Study 2, TSP + ALC adaptation $N = 25$	
	N or mean	% or SD	N or mean	% or SD
Age (M, SD)	20.0	1.9	20.3	1.9
Gender at birth				
Female	21	77.8%	4	16.0%
Current gender identity				
Male	4	14.8%	21	84.0%
Female	11	40.7%	3	12.0%
Trans male	1	3.7%	1	4.0%
Genderqueer/gender non-conforming	10	37.0%	–	
Other	1	3.7%	–	
Sexual orientation			Not assessed	
Lesbian/Gay	11	40.7%		
Bisexual	12	44.4%		
Other	4	14.8%		
Race/ethnicity				
Non-Hispanic White	20	74.1%	18	72.0%
Non-Hispanic Black	2	7.4%	–	–
Hispanic	3	11.1%	2	8.0%
Other	2	7.4%	5	20.0%
Household income				
$20,000 or less	7	25.9%	6	24.0%
$21,000–40,000	6	22.2%	3	12.0%
$41,000–60,000	6	22.2%	4	16.0%
$61,000 or more	8	29.6%	12	48.0%
Years of education (M, SD)	13.3	1.2	13.5	1.4
Currently enrolled in school				
Fulltime/parttime school	17	63.0%	18	72.0%
Not enrolled in school	10	37.0%	7	28.0%
Highest level of education				
Complete high school/GED or less	4	14.8%	3	12.0%
Did not complete college	4	14.8%	1	4.0%
In college	17	63.0%	17	68.0%
Completed college	2	7.4%	4	16.0%
Employment status				
Employed full time	11	40.7%	4	16.0%
Employed part time	8	29.6%	13	52.0%
Unemployed	8	29.6%	8	32.0%
US region of residence				
Northeast	5	25.0%	6	24.0%
Midwest	2	7.1%	6	24.0%
South	14	50.0%	7	28.0%
West	5	17.9%	6	24.0%
Residence urban/rural				
Urban	18	64.3%	21	84.0%
Rural	10	35.7%	4	16.0%
Smoking characteristics				
Daily smoker	15	55.6%	10	40.0%
Number of smoking days per week (M, SD)	6.0	1.4	4.8	2.3
Number of cigarettes per smoking day (M, SD)	6.6	5.4	5.6	7.1
Smoke first cigarette w/in 30 min. of waking	6	22.2%	6	24.0%
Readiness to quit smoking				
Any past year quit attempt	17	63.0%	19	76.0%
Planning to quit in next 6 months	7	25.9%	9	36.0%
Planning to quit in next 30 days	7	25.9%	4	16.0%
Alcohol use in past 30 days	20	74.1%	25	100%
Drinking frequency				
No current alcohol use	7	25.9%	–	–
Monthly or less	1	3.7%	4	16.0%
2–4 times a month	10	37.0%	5	20.0%
2–3 times a week	5	18.5%	7	28.0%
4 times or more a week	4	14.8%	9	36.0%
How many days HED in past 30 days	6.1	3.8	8.8	6.2

Note: HED = Heavy episodic drinking (> = 4/5 drinks for women/men).

Table 2
Focus group results.

	Study 1, SGM adaptation		Study 2, TSP + ALC		
	Group 1	Group 2	Group 1	Group 2	Group 3
Number of invited participants	14	26[a]	5	18	16[b]
Number of active participants	9	18	5	11	9
Number of posts	43	45	43	47	43
Number of numbered posts (Moderator 1)	34	34	43	43	43
Participants commenting on all numbered posts (N, %)	2 (22.2%)	4 (22.2%)	1 (20.0%)	3 (27.3%)	4 (44.4%)
Total number of comments by participants	230	605	211	352	336
Average number of comments per participant (M, SD)	25.5 (12.6)	33.6 (4.7)	42.2 (7.0)	32.0 (14.0)	37.3 (11.8)
Word count per participant comment (M, SD)	21.2 (19.2)	19.6 (22.5)	12.3 (14.5)	12.5 (13.2)	11.1 (13.1)
Number of posts (Moderator 2)	8	9	0	3	0
Number of comments (Moderator 2)	17	15	18	18	13
Number of comment responses (Moderator 2)	54	52	19	7	21
Word count per comment response (Moderator 2)	11.9 (9.4)	14.1 (14.3)	12.2 (6.4)	8.4 (5.7)	10.7 (6.1)
Total number of comment responses by participants	42	77	19	9	18
Average number of comment responses per participant (M, SD)	4.7 (6.2)	4.3 (2.9)	3.8 (2.9)	0.8 (1.4)	2.0 (1.2)
Word count per participant comment response (M, SD)	19.0 (17.5)	17.0 (17.1)	10.8 (11.7)	6.2 (6.1)	10.9 (9.1)

[a] Including 5 participants not attending Group 1 and re-invited to Group 2.
[b] Including 7 participants not attending Group 2 and re-invited to Group 3.

the start of the group. In Group 2, 61% of those invited (11 out of 18) attended the group. The seven people who did not attend the second group were invited once again to participate in Group 3 for a total of 16 invitees. Out of those invited, 56% (9 out of 16) attended the group, for a total attendance of 25 people in the three groups. Participants attending were slightly older than participants not attending (M = 20.3, SD = 1.9 vs. M = 18.9, SD = 1.2; t(35) = 2.3; $p < 0.05$). There were no other significant baseline differences between participants attending and not attending the groups. Characteristics of all participants attending Study 2 can be found in Table 1.

3.2.2. OFG engagement

In Study 2, a range of between 20.0% (Group 1) and 44.4% (Group 3) of participants responded to all 43 numbered questions (Table 2). We observed some between-group variability with regard to comment volume: The average number of comments by participant was 42.2 (SD = 7.0) for Group 1, 32.0 (SD = 14.0) for Group 2, and 37.3 (SD = 11.8) for Group 3. However, the word count per participant comment was fairly consistent across groups with 12.3 (SD = 14.5) for Group 1, 12.5 (SD = 13.2) for Group 2, and 11.1 (SD = 13.1) for Group 3.

3.3. Participant experience with Facebook OFGs across both studies

Participant experiences with the Facebook OFG procedures were positive overall. In response to our last post thanking participants for their engagement and contribution, participants posted comment such as “I enjoyed this, way more than I imagined.” or “Thank you! This was actually pretty fun and interesting.”

The large number of questions and active participants resulted in confusion for some participants. Problems mentioned around the Facebook OFG procedures focused on topics including question order and not being able to find a specific question (questions/posts get reordered every time someone comments) and uncertainty whether or not they had already responded to every question. Moderators addressed these difficulties by responding to participants in real time and tagging them in specific questions they were not able to find.

4. Discussion

Conducting synchronous (real-time) OFGs with young adult participants using Facebook secret groups was highly successful. We conducted five OFGs with a total of 52 participants, who were very engaged and provided rich and quick answers. Compared to a previous study conducting synchronous OFGs using web conferencing software (Woodyatt et al., 2016), our study produced results of similar or even higher quality: While participants in said previous study (Woodyatt et al., 2016) contributed responses of 11–13 words on average, in our two studies average participant comment word count was higher than that in Study 1 and comparable in Study 2. Overall, findings suggest that Facebook is well suited for conducting synchronous OFGs producing high-quality data.

The methodology described here demonstrated utility with two different populations of young adult smokers. There were few differences in the strategies used across the two studies, and recruitment, engagement, and likability of the procedure were similar. However, there were some key differences in the success of specific design strategies across studies, including the extent to which males versus females were recruited for the groups and the extent to which group members were engaged in each study. We observed some variation in number of comments and average word count across studies and groups (e.g., fewer comments but larger word count in Study 1, compared to Study 2). Except for the potential impact of different quantities of numbered posts across studies (fewer numbered posts in Study 1, compared to Study 2), it is unclear what caused this variation in engagement and if the variation is associated with quality and richness of emergent themes. Future studies are needed to investigate this topic. Nonetheless, the design presented in the current paper could be useful as a guide for additional populations and health behaviors, with an important caveat to evaluate metrics of successes throughout the implementation process.

One key advantage of conducting OFGs on Facebook as opposed to in-person includes the possibility to recruit nationwide samples. Given that 82% of online young adults in the US use Facebook (Duggan, 2015) and are very familiar with this platform, this approach of conducting OFGs has the potential to study large and diverse samples in a time- and cost-efficient way. Across the two studies reported here, participants represented each US region as well as both urban and rural areas. The current study extends the literature and adds to previous studies conducting asynchronous OFGs on Facebook (Lijadi and Schalkwyk, 2015; MacLeod et al., 2016) by showing that synchronous (real-time) Facebook OFGs are a feasible data collection approach.

Based on our experiences, we suggest the following strategies for researchers interested in this type of work:

1) Develop a focus group guide iteratively and involve qualitative research experts. We recommend keeping the focus group guide for social media much shorter than for in-person groups.

2) Number the questions in the focus group guide and keep the numbering during posting – this will make it easier for both moderators and participants to keep an overview and direct participants attention to specific question numbers.
3) Internally test the focus group guide in one or more mock session with colleagues and the research team under conditions as real as possible (e.g., using the mode of delivery to be used in the OFG, including multiple mock participants on different devices (computers, smartphones), responding in real time).
4) Provide several time slots for groups and assign participants based on their preference. Assign participants who are available at multiple times to the first group and re-invite non-attendees to the next group after that. We found it useful to send text message reminders at the time the group started to those who said they would attend.
5) Use two moderators/facilitators with clear roles (e.g., one person posting the primary content, one person engaging with participants and asking follow-up questions). This recommendation is in line with what other researchers using focus groups to refine digital interventions have suggested (Avis et al., 2015). With large groups and multiple participants commenting on multiple questions at the same time, we also found that having helpers present to monitor incoming responses and directing moderators' attention to participant questions or opportunities for asking follow-up questions was important.

4.1. Limitations

Findings of the current study are based on five Facebook OFGs with 52 active participants, in the context of two different studies. We did not compare our findings to asynchronous groups on Facebook or other focus group modalities, such as in-person groups. While we did not receive much negative participant feedback on our OFG procedures, we also did not conduct purposeful and systematic follow-up assessments to explore participant satisfaction with focus group procedures more in-depth. This study did not investigate comment content and emerging themes. We will analyze these in future publications to inform the development of a tailored intervention for SGM young adults and to address concurrent smoking and risky drinking. Future studies should systematically investigate which Facebook focus group characteristics impact data quality (e.g., group size, scheduling time, group length). Lastly, while we used secret groups, which represent the highest privacy setting for Facebook groups, all data participants share on Facebook are governed by the terms of contract between users and Facebook. While we made this explicit in the informed consent documents participants agreed to before participating in the focus groups, this limitation to data privacy may make Facebook OFGs not appropriate for studies exploring illegal or highly stigmatized behaviors.

5. Conclusions

The current study focused on our experiences with conducting synchronous Facebook OFGs with young adults and lessons learned. It is feasible to conduct synchronous Facebook OFGs with young adult participants and this data collection method may be particularly appropriate to inform development of social media interventions for health behavior change. Given easy reach of social media, advantages of this approach include the possibility to quickly collect rich data from a national population of Facebook users.

Disclosures

All authors report no conflicts of interest.

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