


## Health Promotion on the College Campus

# Barriers and Facilitators to Implementing Exercise is Medicine Canada on Campus Groups

Brittany M. McEachern, MSc<sup>1</sup>  
 Julia Jackson, BSc<sup>1</sup>  
 Susan Yungblut, BScPT, MBA<sup>2</sup>  
 Jennifer R. Tomasone, PhD<sup>1</sup> 

*The Exercise is Medicine Canada on Campus (EIMC-OC) program was established in 2013 to provide opportunities for students to promote physical activity in their campus communities. Currently, 38 EIMC-OC groups are in operation, and each has encountered challenges and enablers that have yet to be formally documented. This project aimed to (1) identify barriers and facilitators when implementing an EIMC-OC group and (2) investigate levels of implementation at which the barriers and facilitators operate. Throughout winter 2016, 22 EIMC-OC group leaders representing 12 groups contributed data. Participants completed a survey and a semistructured interview developed using the Consolidated Framework for Implementation Research (CFIR). Interviews were transcribed and underwent thematic analysis. Eighteen barriers and 24 facilitators were identified, with four influencers cited as both a barrier and a facilitator. Common barriers included group member time constraints and communicating with health care professionals. Common facilitators included collaborating with other groups and advertising. Most influencers corresponded to the inner setting and process CFIR domains. Findings from this study suggest that EIMC-OC groups face similar barriers and facilitators despite varying local contexts. The influencers identified highlight recommendations to enhance the success of the EIMC-OC program and other multisite health initiatives at academic institutions.*

**Keywords:** knowledge translation; physical activity; health promotion; multi-site interventions; influencers; Consolidated Framework for Implementation Research

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## ► INTRODUCTION

Engaging in regular physical activity (PA) is widely accepted as an effective preventative measure for many health risks and chronic diseases (Tremblay et al., 2011; World Health Organization [WHO], 2014). Unfortunately, only 15% of adults in Canada meet the current Canadian PA Guidelines of 150 minutes of moderate- to vigorous-intensity PA per week (Colley et al., 2011); similar rates of inactivity are seen worldwide (WHO, 2011). Evidently, population-wide health promotion initiatives and programs that aim to improve PA behavior are needed to enhance overall population health. One setting where PA promotion initiatives can have substantial reach is postsecondary institutions. Operating under the national Exercise is Medicine Canada (EIMC) initiative, the Exercise is Medicine Canada on Campus (EIMC-OC) program, established in 2013, calls upon faculty, staff, and students from universities and colleges to promote PA on their campus and in the surrounding community. An improved understanding of the challenges and enablers that influence the implementation of EIMC-OC groups can be used to enhance the success of the EIMC-OC program, as well as other multisite health

<sup>1</sup>Queen's University, Kingston, Ontario, Canada

<sup>2</sup>Exercise is Medicine Canada, Ottawa, Ontario, Canada

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promotion initiatives implemented in academic institutions. Findings can be applied by researchers and practitioner to enhance students' opportunities to learn about and participate in PA and other health-promoting behaviors.

## ► BACKGROUND

PA declines are steep on entering university and college (Kwan, Bray, & Martin Ginis, 2009; Kwan, Cairney, Faulkner, & Pullenayegum, 2012). In fact, more than half of university students in North America are not active enough to gain health benefits (American College Health Association, 2016). The alarmingly low levels of PA among students are associated with suboptimal academic performance, weight gain, and poor overall health and well-being (Dinger, Brittain, & Hutchinson, 2014; Judge et al., 2014; Jung, Bray, & Martin Ginis, 2008). Furthermore, a survey of 19,298 university students from 23 countries revealed a disappointing level of knowledge about PA and the associated health benefits (Haase, Steptoe, Sallis, & Wardle, 2004). Since the likelihood of leisure-time PA among university students is positively associated with students' strength of beliefs in the health benefits of PA (Haase et al., 2004), initiatives that effectively promote PA among students are imperative.

Currently, EIMC-OC groups are formally established at 38 universities and colleges across Canada. The EIM-OC program also exists in the United States, where 162 schools have registered an EIM-OC group, and in Africa, China, Ireland, Japan, New Zealand, and the Philippines (EIM, 2017). The EIMC-OC program aims to foster collaborative relationships and leadership skills between exercise, health, and other disciplines, provide national leadership in PA promotion, and increase the number of health care professionals (HCPs) prescribing PA (EIMC, 2017). The program provides opportunities for students to implement PA promotion initiatives (i.e., advocating for the use of the EIMC prescription and referral tool by HCPs at student health services or local family health clinics) and develop curriculum enhancements that incorporate education about the benefits of PA for HCP trainees (i.e., medical students, nursing students, etc.; EIMC, 2015; Frémont, Fortier, & Frankovich, 2014).

As the EIMC-OC program expands, the EIMC national body continues to pursue strategies for enhancing the success of the program. For example, in 2016, an annual student-led EIMC research conference was launched to enhance networking opportunities among students from various EIMC-OC groups, and the EIMC-OC Knowledge Translation Casebook was published. The

Casebook serves as an information-sharing resource that profiles groups' structure and initiatives (McEachern, Tomasone, & Yungblut, 2016). The Casebook provides an overview of the extent to which the goals of the EIMC-OC program are being achieved by groups by outlining which EIMC-OC initiative categories are most and least commonly targeted by groups. Briefly, PA awareness and promotion activities were most commonly implemented, while curriculum changes were least likely to be achieved (McEachern et al., 2016).

Despite these recent efforts, a full-scale, systematic evaluation of the effectiveness of EIMC-OC groups has yet to be undertaken due to the student-initiated nature of the program and a lack of research funding. Thus, little is known about the unique barriers and facilitators that the EIMC-OC groups face, both individually and collectively. Previous research has identified barriers and facilitators to implementing multisite health promotion interventions in elementary schools (Bowes, Marquis, Young, Holowaty, & Isaac, 2009; Forman, Olin, Hoagwood, Crowe, & Saka, 2009; Gibson et al., 2008; Hall et al., 2014; Mendenhall, Iachini, & Anderson-Butcher, 2013), but there is a paucity of research at the postsecondary level. Understanding the barriers and facilitators experienced by EIMC-OC groups will help groups take advantage of enablers that other groups have used and will highlight areas in which groups may need additional support.

The Consolidated Framework for Implementation Research (CFIR) provides a theoretically informed approach to investigating situation-specific practices and patterns across multiple cases (Damschroder et al., 2009). The CFIR organizes 39 evidence-based constructs that have been shown to influence implementation effectiveness into five domains (i.e., levels of implementation): intervention characteristics, outer setting, inner setting, characteristics of individuals involved, and the process of implementation (see Supplemental Table S1, available in the online version of this article; Damschroder et al., 2009). Previous research has used the CFIR to identify contextual barriers and facilitators to the implementation of various evidence-based initiatives, such as blood pressure control in community practice (Robins et al., 2013) and practices in local health departments (Cilenti, Brownson, Umble, Erwin, & Summers, 2012). Useful insights into what barriers and facilitators EIMC-OC groups commonly face and at which levels of implementation these barriers operate can be gained by incorporating the CFIR through all phases of research, from data collection to the reporting of findings (Kirk et al., 2016). By connecting barriers and facilitators to CFIR implementation levels, opportunities to intervene to enhance the program's success can be identified.

As such, the purpose of the current project was to identify barriers and facilitators when implementing an EIMC group on a university or college campus. The secondary purpose was to investigate the levels of implementation at which the barriers and facilitators operate. To our knowledge, this research is the first to consider barriers and facilitators of multisite health promotion initiatives implemented on university and college campuses. Furthermore, the project is guided by the CFIR to ensure a broad range of potential influences on implementation success are considered. Ultimately, a fulsome, multilevel understanding of the implementation barriers and facilitators that EIMC-OC groups face will help support the long-term sustainability and growth of the program, resulting in a larger proportion of student populations being introduced to exercise as a chronic disease prevention and management strategy.

## ► **METHOD**

### ***Participants and Recruitment***

The study protocol was approved by the institutional research ethics board. In December 2015, the first author contacted the 30 (100%) of the Canadian EIMC-OC groups that were active at the time via e-mail (obtained from the EIMC website; EIMC, 2017) to describe the study purpose and the activities involved in participation. In instances where no response was obtained after two weeks and subsequent reminder e-mails, the first author confirmed the groups' e-mail addresses with the EIMC national body.

### ***Data Collection***

Each EIMC-OC group that consented to participate was sent an electronic preliminary survey that included general questions about the group's composition, mission/vision, and initiatives (see Supplemental Appendix A, available in the online version of this article). Groups were requested to have a group leader who was involved in the initiation of the group or was knowledgeable about the group's history to complete the survey. At the end of the survey, groups were asked to nominate one group leader who was involved in the initiation of the group or was knowledgeable about the group's history and one leader who had experience organizing group initiatives to participate in a semistructured interview with the first author via Google Hangouts. The survey aimed to capture a broad spectrum of group implementation factors relating to the five CFIR domains to facilitate the tailoring of interview questions to each group.

The semistructured interview guide was developed using the CFIR Guide Interview Tool to ensure questions

touched upon multiple levels of implementation (CFIR Research Team, 2018; see Supplemental Appendix B, available in the online version of this article). The guide included open questions about many aspects of the group, including the barriers and facilitators faced by the group during their initiation and ongoing activities. Guides were tailored to each group based on the information provided in the group's preliminary survey. Interviews were conducted throughout January and February 2016. With permission from interviewees, interviews were audio recorded and transcribed verbatim. An overview of the survey and interview guide development process is outlined in Supplemental Appendices A and B, respectively.

### ***Data Analysis***

Interview data that did not concern barriers and facilitators to implementation, and instead related to each group's composition, mission/vision, initiatives, and future directions were documented in the EIMC-OC Casebook (McEachern et al., 2016). A detailed thematic content analysis of the transcribed interviews, as outlined by Braun, Clarke, and Weate (2016), was undertaken to identify common barriers and facilitators and the levels of implementation at which they operate. Using NVivo qualitative analysis software, relevant segments of the text were inductively coded as either a barrier or facilitator and codes were organized into potential themes. All data relevant to each potential theme across interviews were gathered and specifics of each theme were refined (e.g., clear definitions and names). The descriptions of the CFIR domains (Damschroder et al., 2009) were adapted to fit the EIMC-OC groups (see Supplemental Table S1). Themes were then deductively mapped onto the CFIR domains to distinguish the level at which the barriers and facilitators operate. The second author, a critical friend (an individual familiar with the topic of research who supports the researcher in being reflexive and self-aware; Sparkes & Smith, 2014), was consulted at each stage of the coding to provide a theoretical sounding board to encourage reflection upon, and explanation of, alternative interpretations of the ideas and themes identified and of the analysis of the data. Finally, the frequency of each theme and each CFIR domain was determined.

## ► **RESULTS**

### ***Participants***

Fifteen EIMC-OC groups from six provinces across Canada completed the preliminary survey. Twelve of the 15 groups who completed a survey participated in a follow-up interview and were included in the analysis. Ten

**TABLE 1**  
**Demographic Characteristics of Exercise is Medicine Canada on Campus Groups Who Participated in Interviews Investigating Barriers and Facilitators Experienced by the Groups**

<i>Characteristic</i>	<i>EIMC-OC Groups in Study (N = 12), n (%)</i>
Type of institution	
College	1 (8.3)
University	11 (91.7)
Province	
Alberta	1 (8.3)
British Columbia	1 (8.3)
Nova Scotia	2 (16.7)
Ontario	7 (58.3)
Quebec	1 (8.3)
Campus population	
<10,000	4 (33.3)
10,000-20,000	1 (8.3)
20,000-30,000	4 (33.3)
>30,000	3 (25.0)
Year group was launched	
2013	2 (16.7)
2014	4 (33.3)
2015	5 (41.7)

NOTE: EIMC-OC = Exercise is Medicine Canada on Campus.

interviews included two representatives from the EIMC-OC group; however, two groups were only able to have one representative due to scheduling difficulties (22 interviewees total). The groups who participated in the interviews were primarily based in universities ( $n = 11$ ), with most groups located in Ontario ( $n = 7$ ). The launch date of the groups ranged from February 2013 to October 2015. The institution sizes also varied significantly from <5,000 students to >80,000 students. Demographic characteristics of the groups are displayed in Table 1. The average interview length was  $50.0 \pm 14.9$  minutes.

### **Barriers and Facilitators**

In total, 18 unique barriers and 24 unique facilitators were identified across the interview transcripts (see Supplemental Tables S2 and S3, available in the online version of this article, for a complete listing of barriers and facilitators, respectively). Tables 2 and 3 list the top five most commonly cited barriers and facilitators, respectively. Participants most commonly cited the challenge of

promoting group initiatives to students from a range of disciplines, especially to disciplines that are not health-related. Other commonly cited barriers included school characteristics (e.g., lack of health-related programs, “commuter campus” culture, etc.), determining an effective size and structure of the group, advocating for curriculum changes, and financial challenges. The most commonly cited facilitator was collaborating with other campus and community groups. Additional facilitators included support from the university or college, community, and student body, and the adoption of a project-based structure in which smaller working groups are formed for specific initiatives and tasks are delegated to group members accordingly.

Interestingly, four influencers (i.e., barriers or facilitators) were identified as both barriers and facilitators. In fact, the most commonly cited barrier, promoting the group to students from a range of disciplines, was also cited as a facilitator 16 times. Furthermore, communicating with other EIMC-OC groups was one of the top five most commonly cited barriers and facilitators. Other influencers cited as both a barrier and facilitator can be found in Tables 2 and 3.

### **CFIR Domains**

The barriers and facilitators experienced by the groups most often fell within the process and direct inner setting domains. Refer to Supplemental Table S1 for a breakdown of the number of barriers and facilitators mapped to each domain.

## **► DISCUSSION**

This study identified the barriers and facilitators that EIMC-OC groups commonly face when implementing group initiatives that aim to promote PA among postsecondary students and community members. Specifically, 18 barriers and 24 facilitators were identified through interviews with members of 12 EIMC-OC groups. Despite contextual differences among the groups, such as the setting in which they are implemented, the group structure, the number of students involved, and the types of initiatives implemented, many common barriers and facilitators were identified.

A commonly cited challenge among EIMC-OC groups was communicating with HCPs. First, many groups found it difficult to get in contact with physicians and other HCPs unless a group member had a prior connection. Second, members often expressed a lack of self-efficacy in terms of approaching and encouraging physicians to prescribe exercise. Group leaders reported similar challenges when trying to communicate with key

**TABLE 2**  
**Five Most Commonly Cited Barriers to Implementing Exercise is Medicine**  
**Canada Groups on University/College Campuses**

<i>Barrier</i>	<i>CFIR Domain(s)</i>	<i>Frequency</i>	<i>Illustrative Quote</i>
1. Promoting group initiatives to students from a range of disciplines	Process (engaging)	34	“The struggle was kind of not having . . . the widespread type of students that that would basically help generate participation from um a lot of different people. . . . we were kind of relying on like a core group of people.”
2. Time constraints (of group members, key stakeholders, etc.)	Outer setting (cosmopolitanism), direct inner setting (available resources)	28	“There was one . . . endocrinologist who we were put in contact with who was initially interested in working with us . . . due to her busy schedule and kind of our busy schedule . . . we lost communication on that front.” “It’s challenging just even the faculty members that are on board, they have crazy busy schedules . . . and as do students as well.”
3. Communicating with health care professionals	Intervention characteristics (complexity), characteristics of individuals (self-efficacy), process (engaging)	23	“It is very difficult to get doctors to switch over to this new method of talking and prescribing um exercise.” “Personally I’m not sure how to approach a physician in getting them to prescribe exercise.” “Most of us don’t have a lot of connections with physicians.”
4. Scheduling	Direct inner setting (structural characteristics, networks and communications), process (planning), process (engaging)	18	“It would be nice to have meetings more often. It’s just a schedule concern and I think that’s where it comes back to our executive team being a little bit too big.” “. . . Finding dates, like we need to try to settle on a time for an event or a day for an event. We all have such different schedules cause some of us are in Med, some of us are in Dentistry, some of us have like full undergrad courses, and then some of us are there all summer.” “This past year we unfortunately had some competition there was three events on the same evening so we had less attendance”
5. Communicating with other EIMC-OC groups	Intervention characteristics (adaptability), peripheral inner setting (networks and communications)	17	“We did a little bit of research on what other schools have done for their Exercise is Medicine events but we can’t compare to them.” “. . . That [communication with other EIMC-OC groups] I would say is pretty limited for at the time being. The only way that we have methods of contacting other groups is if, for example, he [group member] was part of the group at [Name of School] so we have some contact through him to the group at [Name of School].”

NOTE: CFIR = Consolidated Framework for Implementation Research; EIMC-OC = Exercise is Medicine Canada on Campus. CFIR Domain(s) column presents the domain(s) at which the barrier operates. Frequency column presents the number of times each barrier was referenced across 12 interviews.

**TABLE 3**  
**Five Most Commonly Cited Facilitators to Implementing Exercise is Medicine Canada Groups on University/College Campuses**

<i>Facilitator</i>	<i>CFIR Domain(s)</i>	<i>Frequency</i>	<i>Illustrative Quote</i>
1. Collaborating with other campus or community groups	Outer setting (cosmopolitanism), process (engaging)	40	<p>“We’ve built some good connections with the recreation centre and health services on campus, so those are both things that we can utilize for the upcoming symposium.”</p> <p>“We’ve started creating um networks with other student groups that we can be in regular contact with . . . we partnered with Canadian Obesity Network students and New Professionals Group at [Name of School] and had a really successful partnership.”</p>
2. Advertising	Process (engaging)	38	<p>“We have our Facebook page and then we create events there and kind of send them out, just trying to invite all of our friends and hopefully it gets passed along. . . . We printed off a lot of posters and just posted them on bulletin boards all around the school and chalkboards. . . . and I’m a Masters student so I actually just walk into classes to promote.”</p>
3. Support from faculty	Outer setting (cosmopolitanism), direct inner setting (readiness for implementation), process (engaging –opinion leaders)	30	<p>“She [the group’s faculty representative] has helped us . . . connect with other community members.”</p> <p>“The faculty advisors for our group initially had a bigger role in starting the club up . . . they kind of brought it to our campus and worked with our previous president in creating the club at first.”</p> <p>“It’s nice to have another person who is in the field kind of talking about our group, especially when it comes to things like the medical school curriculum and changing it. You’d be pretty hard-pressed for a group of graduate students to go and do that, and so her being there and actively participating in those discussions really like legitimizes those types of things.”</p>
4. Communicating with other EIMC-OC groups	Intervention characteristics (adaptability) and process (reflecting and evaluating), outer setting (cosmopolitanism), direct inner setting (readiness for implementation), and process (planning)	25	<p>“I went to the CSEP conference in October. They had the Exercise is Medicine on Campus group meeting directed by Susan and we all sat down and people expressed what events they did, how they went, what they would change and that was definitely very eye-opening to me because we only started the group a month earlier. So I was able to take some of their ideas and . . . just morph them to suit [Name of Town].”</p> <p>“[Chair of other EIMC-OC group] e-mailed me a doctor’s number who’s willing to come in and talk to the campus . . . so talking to him was good the day that I did.”</p> <p>“We had to write the club constitution and the general mandate and stuff like that . . . I just used stuff from the website but I was in contact with the girls from [Names of Schools] . . . and they sent me their constitution . . . then they helped me write it”</p>
5. Support from the EIMC national body	Peripheral and direct inner setting (networks and communication), direct inner setting (readiness for implementation)	23	<p>“She [Director of EIMC] put me in contact with [Name of School] who’s a professor in the School of Human Kinetics at [Name of School] . . . we worked together to kind of spearhead the whole thing.”</p> <p>“For promotions and stuff like putting banners up . . . we wouldn’t be able to afford that kind of stuff if it wasn’t for having [Director of EIMC].”</p>

NOTE: CFIR = Consolidated Framework for Implementation Research; EIMC = Exercise is Medicine Canada. CFIR Domain(s) column presents the domain(s) at which the facilitator operates. Frequency column presents the number of times each facilitator was referenced across 12 interviews.

stakeholders about curriculum changes that would enhance knowledge of the importance of exercise prescription. Since physicians are respected sources of health-related information and exercise remains underprescribed in medical practice (Hoffmann et al., 2016), EIMC-OC groups can have an important impact on the exercise habits of Canadians by effectively engaging current and future HCPs. To facilitate members' contact with HCPs, the EIMC national body could consider requiring that all groups have an HCP on the leadership team, a requirement that the EIM national body in the United States has already adopted. Furthermore, groups could be encouraged to liaise with a faculty member who may facilitate interactions. Additionally, to prepare members to confidently educate and interact with HCPs and other key stakeholders, the EIMC national body could host webinars or workshops for group members from each group. Indeed, past research suggests that individuals involved with leading multisite health promotion interventions at different schools find workshop training sessions to be helpful in enhancing their preparation to carry out the intervention activities (Gibson et al., 2008).

The most commonly referenced facilitator was collaborating with other campus or community groups. The EIMC-OC groups had established a wide range of partnerships, including working with student groups promoting mental health awareness, residence counsellors who could promote initiatives to students living on campus, and community fitness clubs who could provide resources for group events and promote initiatives to community members. Furthermore, these collaborations often resulted in supporters of the partner group being exposed to EIMC when they may not have been otherwise. Collaboration and partnerships with other groups within the implementation setting has been identified as a factor that aids multisite health promotion initiatives (Bowes et al., 2009; Hall et al., 2014). Moving forward, the EIMC national body should encourage new groups to collaborate with other groups from the start and could even provide new groups with lists of potential collaborators. Another commonly referenced facilitator was having a faculty liaison who represents the group among faculty and staff and develops connections with HCPs and other stakeholders. Similarly, one factor contributing to successful implementation and sustainability of multisite interventions in elementary school settings is teacher/staff engagement (Forman et al., 2009; Hall et al., 2008). Since teachers, staff, and faculty seem to influence implementation success in school settings, a requirement for each EIMC-OC group to have a faculty liaison may ensure all groups have the support and resources they need to optimize their success.

Last, some influencers were identified as both a barrier and a facilitator, depending on the situation. For example,

the most commonly cited challenge was promoting initiatives to students from a range of disciplines, especially disciplines not related to health. Currently, most groups are led by students and faculty from kinesiology, medical, or health sciences backgrounds. Not surprisingly, this means most of the students attending the groups' events are also from health-related programs. Finding ways to encourage students from other programs to engage in group initiatives is important since these students likely have less exposure to PA education and opportunities through their courses. Groups who cited this influencer as a facilitator claimed that incorporating students from varying disciplines on their executive facilitates advertising to and improved understanding of the perspectives, schedules, and interests of a wide range of student groups. The EIMC national body could address this influencer by encouraging or requiring groups to include students from a range of disciplines on their executive committee. Additionally, communication between EIMC-OC groups at different schools, and between these groups and the national body, was often cited as being incredibly helpful but also in need of significant improvement. Almost every group mentioned that they would like to see more communication among the groups. The EIMC-OC Knowledge Translation Casebook helps address this gap in communication (McEachern et al., 2016). Evidence suggests that consistent communication between schools involved in multisite health promotion initiatives (Mendenhall et al., 2013) and between the individuals implementing the initiatives and the overarching organization (Hall et al., 2014) can be helpful for sharing successful and unsuccessful practices. Overall, a medium where EIMC-OC group members could discuss their challenges, successes, and strategies and provide input to the EIMC national body would likely enhance the program as a whole.

The study also unpacks the levels of implementation at which the commonly cited barriers and facilitators act upon by relating each influencer to one or more domains from the CFIR. The challenges faced by EIMC-OC groups relate to the members of each EIMC group and interactions between these members (direct inner setting) or the processes groups use to plan, deliver, and evaluate their initiatives (process). This finding is encouraging because these areas are within the control of each EIMC group and the EIMC-OC national body. Thus, the recommendations for practice provided above may help EIMC-OC groups overcome common barriers and bolster common facilitators. This study's findings and recommendations can also transfer to EIM-OC groups from other countries since all EIM-OC groups are associated with an academic institution. Many of these recommendations may also extend

beyond the EIMC-OC program to other student groups operating on various university or college campuses. The overlap between the findings of the present study and those of Forman et al. (2009) and Hall et al. (2014) suggest that other multisite groups associated with educational institutions will likely face similar challenges and facilitators due to the shared implementation context. Therefore, other multisite health promotion initiatives implemented at universities or colleges, such as Friends of Medecins sans Frontieres/Doctors Without Borders (2018) or Leave the Pack Behind (2016), can use these findings to improve their activities and impact. The initiatives may also benefit from using aspects of the current study's research process to investigate the barriers and facilitators specific to their organization.

### Strengths and Limitations

One of the strengths of this study was the use of the CFIR at all stages of the research process, including the development of the preliminary survey and semistructured interview questions as well as the analysis and reporting of data. Previous research using the CFIR has applied the framework to guide data analysis only (Kirk et al., 2016). Using the CFIR throughout the entire research process ensures that all relevant variables are considered (Kalkan, Roback, Hallert, & Carlsson, 2014); this use of the framework proved useful when investigating and organizing the barriers and facilitators identified in this study. However, differentiating between inner and outer setting in terms of the EIMC-OC groups was challenging, supporting Damschroder et al.'s (2009, p. 23) statement that "the line between inner and outer setting is not always clear and the interface is dynamic and sometimes precarious." To address this issue, the present study developed two levels of inner setting: a direct inner setting and a peripheral inner setting (Supplemental Table S1). This division may be useful for future researchers using the CFIR. In addition, the qualitative approach of this study allowed a detailed understanding of ground-level experiences and possible factors influencing the success of the EIMC-OC groups from the perspectives of the individuals directly involved.

Despite these strengths, this study was not without limitations. First, a potential self-selection bias may affect the study's generalizability. The groups who chose to participate were likely the more active and engaged groups; thus, the challenges and facilitators of these groups may not reflect those faced by other groups. Second, only group leaders' perspectives were included. The barriers and facilitators identified by other group members or by groups' target audiences may differ from those of the group leaders. Future

research should recruit a greater proportion of the active groups and consider eliciting the ideas of general group members, group partners, and target end-users to gain further information about areas for improvement.

### Conclusions

This study describes the common barriers and facilitators experienced by 12 EIMC-OC groups striving to engage campus communities in PA promotion and awareness activities. This research was guided by the CFIR (Damschroder et al., 2009), an evidence-informed framework for implementation research, and provides an example of how the CFIR can be successfully integrated at all stages of the research process—from data collection to data analysis and reporting. The findings can be used to enhance the success of the EIMC-OC program, as well as other multisite health promotion initiatives implemented in academic institutions, so that student populations have more opportunities to learn about and participate in PA and other health-promoting behaviors.

### SUPPLEMENTAL MATERIAL

Supplemental Tables S1–S3 and Appendices A and B are available in the online version of this article at <https://journals.sagepub.com/home/hpp>.

### ORCID iD

Jennifer R. Tomasone  <https://orcid.org/0000-0003-0446-9706>

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