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Envisioning a community food hub to support food security: A community engagement process at a post-secondary institute

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Abstract

Objective: The objective of this community-based participatory action research (CBPAR) project was to gain an in-depth understanding of the needs, interest and opportunities that exist within a post-secondary institution with respect to supporting food security among students via a food hub.

Methods: The project was undertaken on the campus of the University of British Columbia-Vancouver. The CBPAR approach included 4 phases: 1) information gathering, 2) relationship development, 3) implementation of the community engagement strategy, and 4) shareback of findings to the community.

Results: Phase 1 identified key components that formed the research process including campus partners for relationship development (phase 2) and subsequent engagement through their networks (phase 3).

Phase 3 included engagement of 62, 111, 156, and 154 students, who participated in facilitated dialogues, community meals, a survey and targeted survey, respectively. Food insecurity related experiences were prevalent, with 37% to 75% indicating they worried about running out of food in the last year. Over 90% of all survey respondents affirmed that they would access a community food hub (CFH). Preferences for the CFH were inclusion of emergency food access, community meals, and financial support and planning, while

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prioritizing foods that meet cultural needs, and a low-cost grocery store within the CFH.

Conclusion: There is a demonstrated need and desire among students for innovative approaches to support food security at a post-secondary institution. The process outlined may serve as a road map for other communities who are seeking to move beyond emergency food relief.

Keywords: Nutrition; public health; food insecurity on campus; food insecurity; university students; health; poverty; inequities; Canada; health promotion

Résumé

Objectif : L'objectif de ce projet de recherche-action participative (RAP) était d'acquérir une compréhension approfondie des besoins, des intérêts et des opportunités au sein d'un établissement postsecondaire en ce qui concerne le soutien à la sécurité alimentaire de la communauté étudiante au moyen d'un centre alimentaire.

Méthodes : Le projet a été entrepris sur le campus de l'Université de la Colombie-Britannique, à Vancouver. L'approche PAR comprenait 4 phases : 1) collecte d'informations, 2) développement des relations, 3) mise en œuvre de la stratégie d'engagement communautaire et 4) présentation des résultats à la communauté.

Résultats : La phase 1 a permis d'identifier les éléments clés du processus de recherche, notamment les partenaires du campus pour le développement des relations (phase 2) et l'engagement ultérieur à travers leurs réseaux (phase 3).
La phase 3 a impliqué 62, 111, 156 et 154 étudiants, qui ont participé respectivement à des discussions organisées, à des repas communautaires, à une enquête et à une enquête ciblée. Les expériences liées à l'insécurité alimentaire étaient courantes : 37 à 75 % des personnes ont mentionné qu'elles s'étaient inquiétées de manquer de nourriture au cours de la dernière année. Plus de 90 % des personnes répondantes à l'enquête ont affirmé qu'elles recouraient à un centre alimentaire communautaire. Les préférences exprimées comprenaient un service alimentaire d'urgence, des repas communautaires, le soutien financier et la planification, ainsi qu'une priorité accordée aux aliments répondant aux besoins culturels et à une épicerie à bas prix au sein du centre.

Conclusion : Il a été démontré que la communauté étudiante a le besoin et le désir que des approches novatrices soutiennent la sécurité alimentaire dans un établissement d'enseignement postsecondaire. Le processus décrit peut servir de feuille de route à d'autres communautés qui cherchent à aller au-delà de l'aide alimentaire d'urgence.

Background

Household food insecurity is characterized as a lack of access to food due to financial insecurity (Tarasuk et al., 2022), whereas to be food secure denotes equitable access to food that is affordable, culturally preferable, nutritious, and safe (BC Centre for Disease Control, 2022). Food insecurity is more common in low-income households, but inflation and rising costs of basic necessities are pushing additional households into poverty (PROOF, 2022; Tarasuk et al., 2022). Race and Indigeneity are also strongly linked to food insecurity. In Canada, Black households are almost two times more likely to experience food insecurity than white households, even when other sociodemographic variables are similar (Dhunna & Tarasuk, 2021). In 2021, over 30% of Indigenous peoples living off-reserve reported experiencing food insecurity (Tarasuk et al., 2022). Comparatively, data from 2021 show that the prevalence of food insecure households in the general Canadian population is 15.9% (Tarasuk et al., 2022).

Direct comparison of the prevalence of food insecurity across populations is challenging due to the use of different tools to measure food insecurity. Nonetheless, food insecurity is pervasive among postsecondary students in North America, with prevalence estimates of food insecurity ranging from 15% to 50% (Bruening et al., 2017; Entz et al., 2017; Freudenberg et al., 2019; Wang et al., 2023). Financial insecurity and income are the largest contributing factors to student food insecurity (Silverthorn, 2016). Data from the United States suggest there is an increasing number of low-income postsecondary students (Freudenberg et al., 2019). Students face housing affordability challenges and unique financial burdens that impact access to food, including rising tuition costs and textbook prices (Silverthorn, 2016). Food insecurity may deleteriously impact physical, mental, and academic wellbeing, with increased risks of chronic disease, obesity, depression, social isolation, lower academic performance, and postponed graduation (Gundersen & Ziliak, 2015; Maroto et al., 2015; Martinez et al., 2020).

The University of British Columbia Vancouver Campus (UBC-V) similarly reports high rates of student food insecurity. At UBC-V, a 2019 survey revealed that 37% of undergraduate students experienced food insecurity, while a separate survey, also in 2019, showed 30% of graduate students at UBC-V experienced food insecurity (Carry et al., 2020). The numbers were even higher at UBC's Okanagan campus (UBC-O), with 42% of undergraduate and 42% of graduate students identifying as food insecure (Carry et al., 2020). A study examining food insecurity amongst postsecondary students studying at UBC-O found that students experiencing two or more forms of marginalization (e.g., international students, disabled students, female-identifying students) were two and a half times more likely to experience food insecurity (Hamilton et al., 2020).

As of November 2021, the student populations were 60,292 at UBC-V and 11,989 at UBC-O, with 19,413 of them identifying as international students (UBC Planning and Institutional Research, 2022). Across both UBC campuses there is infrastructure to support student food security, such as financial aid, a student-union operated food bank, student-led affordable dining options, and institutional investment in new dedicated food security resources through the UBC Food Security Initiative (FSI), a cross campus approach to promoting food security that upholds the principles of the Okanagan Charter (Okanagan Charter, 2015; University of British Columbia, n.d.). When this research project was conducted in 2022, UBC-V was home to emerging food security programs and services such as a Food Hub

website offering food, financial, and wellbeing resources; the UBC Meal Share Program, which allocates finances to students for purchasing food (University of British Columbia, 2023); and the UBC Student Affordability Plan (Carry et al., 2022). Despite these efforts, the prevalence of student food insecurity remains high, which suggests the need for expansion of food and financial security supports on campus.

In order to address high rates of student food insecurity, many postsecondary institutions are searching for new solutions beyond emergency access to food. Although frequently highlighted as a primary response to food insecurity, food banks are often a last resort for those experiencing food insecurity, with only one in five households indicating that they used food banks as a coping strategy when experiencing food insecurity (Men & Tarasuk, 2021; Tarasuk et al., 2020). While food banks provide immediate access to food, the impact on long-term improvement in food security is limited since food banks do not address the cause of food insecurity—income (Bazerghi et al., 2016). Community food hubs (CFHs) are gathering places that typically include multiple alternative food initiatives (AFIs), such as community kitchens, capacity building programs related

to food and financial literacy, community gardens, and farmers markets. CFHs move beyond emergency food relief services to address food insecurity with a more dignified, holistic, systemic, and justice-oriented approach (Edge & Meyer, 2019).

To our knowledge, at the time of this research, there are no post-secondary institutions in Canada that have implemented CFHs (Glaros et al., 2021; Murphy et al., 2022). As a result, best practices with respect to their design, development, and implementation are unclear. This gap in evidence is a barrier to more widespread adoption, research, and evaluation of CFHs and AFIs within them. We conducted a community-based participatory action research (CBPAR) project at UBC-V to inform the development and implementation of a CFH on campus. We present a unique approach to community engagement and a detailed reference for postsecondary institutions and other organizations that are interested in implementing AFIs and community approaches to food security that move beyond emergency food relief.

Methods

Research approach: Community-based participatory action research (CBPAR)

This study was undertaken between April 2021 and August 2022 and was informed by a project conducted at the UBC-O campus (Clement & Hamilton, 2020, Clement & Hamilton, 2021). Approval was obtained from the Institutional Behavioural Research Ethics Board (H21-00641). Some activities (described below) were virtual due to the COVID-19 pandemic and associated public health restrictions. A CBPAR

approach was used to ensure a focus on respectful community engagement, involvement of those affected by food insecurity in the development of solutions and decision-making, and the emphasis of CBPAR on action and social change (Wilson, 2018). CBPAR was also chosen for its iterative research process, allowing for revision of the research approach throughout its implementation and enabling inclusion of a diversity of

community perspectives (Wilson, 2018). CBPAR was seen as a way to address a central critique of AFIs: that the planning and development phases of AFIs often exclude those most affected by food insecurity, in particular individuals and communities who are racialized and/or face other forms of systemic marginalization and oppression (Guthman, 2008; Slocum, 2006). In this study, we centered students, including those experiencing food insecurity, in the research and action.

A phased-approach was used in which each phase was informed by the prior phase and also informed the refinement of subsequent phases. Phase one consisted of information gathering. Phase two involved outreach that focused on relationship development. Phase three was the implementation of the community engagement strategy, and in phase four results were shared with the campus community to inform the co-creation of a CFH plan and framework.

Student community developers

Student Community Developers (SCDs) were hired to join the research team and take a lead role in the research project, with mentorship, guidance, and support from other research team members.

Phase one: Information gathering

The SCDs identified and gathered key resources such as reports, proposals, and student research projects pertaining to UBC food security and food systems. These resources were reviewed to support the SCDs' foundational knowledge of past and present food systems work at UBC.

The research team identified nine individuals with direct experience, institutional knowledge, management and oversight within food systems, and/or leading

community engagement work across both UBC campuses. Individuals were contacted via email, and virtual interviews were conducted. Interviews informed the SCDs' process of forming an advisory group to support and develop the research process and included those interviewed in phase one as well as UBC FSI members (students and staff). Throughout the remainder of this project, the advisory group provided consultation on the research approach and process and helped the SCDs connect with campus partners in phase two of the project.

Phase two: Formulating partnerships

SCDs contacted a total of forty-four potential campus partners, including student services offices, the student union, the student food bank, student clubs (e.g., Black Students Union), and campus groups who support students most affected by food insecurity and/or who are engaged with food security-related activities on campus. Participants were invited to complete a pre-interview demographic survey and a virtual interview that was recorded. During interviews, SCDs inquired how best to engage with and involve students represented and supported by the partners interviewed. Interviewees were also questioned regarding their capacity to co-host phase three community engagement events and/or their interest in involvement in further phases of the research. The targeted interviews informed the co-development community engagement methods with campus partners for phase three.

Phase three: Targeted and broad community engagement

Five topics relevant to the creation of a CFH at UBC-V were outlined around which to consult the campus community: 1) space and atmosphere, 2) services, 3)

community, 4) evaluation and indicators of success, and 5) institutional support.

Community engagement methods included community meals, community dialogues, and an online survey. The online survey consisted of a targeted survey to engage those with lived experience of food insecurity as well as a broad community survey for the general student population. No exclusion or inclusion criteria were applied for either the targeted or general surveys. Rather, an SCD invited participants who were accessing a campus food hamper program to complete the targeted survey. This approach was thought to be more likely to capture those with lived experiences of food insecurity, although this was not specifically queried when inviting participants to complete the survey. The general survey was distributed throughout all events as part of a recruitment campaign. Campus partners (student service departments, campus food banks, student clubs, etc.) interviewed in phase two promoted the community engagement events and online surveys through their own communications and informal avenues (e.g., relaying information about the CFH project to students who used their services). SCDs set up stations on campus with information on the CFH project, community engagement events, and online surveys. This information was also shared on a project website.

Community meals and dialogues

Community meals and dialogues were hosted by the SCDs and campus partners as part of the engagement strategy. Informed consent was obtained from participants prior to engagement. Participants were asked to complete a short questionnaire collecting demographic data. Dialogue sessions consisted of moderated discussion facilitated by SCDs and campus partners, whereas community meals encouraged

participants to record their own responses to prompts displayed around the space in which the community meal was hosted. Meals were provided at no charge at in-person events.

The SCDs approached community meal planning with the understanding that food and community inform one another, that food brings people together and offers a point of shared connection and understanding, and that meals can be opportunities for storytelling. While participants were eating and socializing, they were encouraged to interact with prompts and questions displayed around the space. Prompts and questions related to the five topics (space, services, community, evaluation, and institutional support) were displayed on posters around the room. Participants could share ideas with one another, and they were asked to write their responses anonymously below the prompts.

Dialogue sessions were held in person or over Zoom. Dialogues were facilitated using predetermined prompts and questions based on the same themes as at the community meals. The SCDs collected data during dialogue events through notetaking. Dialogue events were flexible and variable in structure, dependent on the number and specific needs of participants.

Survey participation consisted of a consent form, a demographic survey, multiple choice questions, and open-ended questions. The targeted survey was promoted in person and via email directly to students who accessed emergency food services at UBC-V. All targeted survey participants received compensation. The community survey was available to any UBC community member. A prize draw was also offered as an incentive.

Phase four: Dissemination of findings to community

The results of phase three were shared back with the campus community as the final phase of the CBPAR approach. Student group leaders, campus partners, and advisory groups were invited to the dissemination of findings to inform a collective framework and leadership for the CFH. Details of phase four are not presented herein for brevity.

Statistical analysis

Analyses of data from the community meals, dialogues, and online surveys were undertaken by the SCDs, with guidance from the research team. Quantitative data were analyzed using descriptive statistics. Data collected in targeted and community surveys were analyzed separately to understand if the results yielded disparate opinions, needs, and reflections between students who accessed emergency food relief on campus and students who did not. Results were summarized using counts (N, %). Qualitative data from community meals and community dialogues were analyzed collectively, while qualitative data from targeted and community surveys were analyzed individually. Qualitative data were analyzed by each SCD independently using a coding framework consisting of the five topics (space, services, community, evaluation, and governance). Sub-categories were identified as the analysis progressed. After independently analyzing the qualitative data, the SCDs met to discuss their analyses, to seek consensus regarding categories and sub-categories, and to discuss overall themes emerging from the data.

Results

Phase one: Information gathering

Phase one meetings with advisory group members fulfilled an integral component of the CBPAR process—collaboration at the project outset. Five key outcomes emerged from the meetings held: 1) affirmation of and agreement on the necessity of this project, 2) agreement that equity, inclusivity, and anti-oppressive approaches must be prioritized through widespread community engagement and collaboration, 3) support for submission of an ethics application, 4) refinement of the research concept, and 5) identification of campus partners (groups and individuals) to involve in phase two. These outcomes supported the SCDs in formulating next steps and the research plan.

Phase one was ongoing; the advisory group continued to support and guide the SCDs over the course of the project. As per the iterative nature of CBPAR projects, the SCDs returned to the advisory group with project updates and inquiries, obtaining advice regarding all aspects of the project as it unfolded.

Phase Two: Formulating partnerships

SCDs conducted twelve interviews with campus community partners. A critical outcome of phase two was partnership development between the SCDs and groups on campus that expressed interest in having a key role in community engagement and in the CFH project more broadly. A number of themes emerged from initial discussions, including: food security advocacy and/or research, food affordability, food literacy, sustainability, climate justice, and student wellbeing. Partners suggested that a CFH project could

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advance support in these key areas through resource provision, stigma reduction, and creation of a safe physical space for student wellbeing. Partnerships developed in this phase informed phase three community engagement methods and elicited a commitment from partners to co-host community engagement events in phase three. Due to the iterative nature of the project, phase two partnership development was ongoing throughout the duration of phase three engagement.

Phase Three: Targeted and broad community engagement

Demographics

Table 1 presents participant demographics for those who opted to complete the demographic questionnaire as part of the facilitated dialogues (n=62), community meals (n=111), generalized survey (n=156), and targeted survey (n=164). The majority of participants were undergraduate students between the ages of eighteen and twenty-four, except for the targeted survey, where the majority were graduate students between the ages of twenty-five and thirty-four. The majority of participants across all community engagement identified as women. Food insecurity-related experiences were prevalent among participants, with 75% (targeted survey) and 37% (community meals) indicating they worried about running out of food in the last year.

The results for space, services, community, evaluation, and institutional support are summarized collectively across the types of engagement events below.

Space

Dialogue and community meal event participants provided open-ended responses that generally clustered into the following categories: ambiance, design, and location. Participants envisioned a warm and welcoming atmosphere, an open, bright, and, colourful design with greenery and plants, music, and comfortable furniture. Participants provided mixed responses to the question of whether a CFH would be better positioned in one centralized location or multiple locations. One participant shared how location could influence use: "Somewhere central—people are encouraged to come for the community, not because they are in need." Participants compared the atmosphere of a future CFH to existing food-focused spaces on campus at UBC-V, such as student-centered community spaces. Another response indicated the desired atmosphere of a future CFH to be "just like Grandma's living room."

Table 2 shows the findings on space from both surveys. Nearly half of respondents to the community survey indicated a preference for integrating elements of a CFH into familiar physical spaces on campus. Respondents also showed a preference for a new physical space that would bring together food security and wellbeing resources. The remainder of respondents preferred better coordination between existing food programs rather than a new physical CFH. The majority of respondents envisioned the CFH in multiple spaces (targeted n=109, 66.5%; community n=113, 72.4%), with the remainder of respondents (targeted n=55, 33.5%; community n=43, 28.7%) envisioning a centralized CFH. Survey respondents were also asked to identify the top three amenities they would like to see included in a CFH (Table 3), which were a low-cost grocery store, community garden or space to grow food, drop-in cooking space (community

survey), and communal fridge or food storage space (targeted survey). One participant envisioned a potential connection between gardens and a food hub grocery store: "Gardens are key...by learning how to garden, how to run a garden, let the garden(s) provide food for the grocery store and therefore be a source for funding these initiatives."

Services

Participants in the community meal events and dialogue sessions envisioned a variety of programs, services, and food-related activities, such as recreational and cultural programs and events, communal meals, cooking, purchasing food, food-focused educational opportunities, and social opportunities for building and expanding community. Participants described a variety of services, such as free food, free hot meals, a low-cost grocery store, a kitchen available for use by students, and a seating area for dining, studying, and socializing. Responses also included services focused on food security, health and nutrition, financial management, and budgeting. Participants described a number of ways for students to be involved with a CFH, including volunteer opportunities, donations, making and sharing food, hosting events, supporting the creation and development of the CFH, and spreading awareness about the CFH.

Over 90% of all survey respondents affirmed that they would access a CFH at UBC-V (Table 5); 47.7% of targeted survey respondents would access a CFH very frequently (once per week), compared to 23.7% of generalized survey respondents (Table 4). Survey respondents in the community and targeted surveys selected the top three programs or resources to be provided through a CFH (Table 5); emergency food access, community meals, and financial support and planning were the top programs or resources selected in

both surveys. Survey respondents additionally suggested desired programs and resources when prompted with an open-ended question: responses included legal and immigration services, clothing exchange services, a food bank, culture-specific meals and food-focused programming, services based on provision of local and Indigenous ingredients and foods, employment opportunities for students, recipe support, food hampers, and specific supports for students with children such as a toy library, child nutrition support, and prenatal food and support. Another open-ended question asked people to report why they would access the CFH and for what purpose. Generally, respondents in the targeted survey indicated that they would access a CFH for financial support, community social connection, and food access, whereas respondents in the community survey focused on community development, social inclusion, and food access. Example responses included: "It's really hard to access affordable healthy food on campus. Not only rent is expensive but also healthy food access is expensive too," and, "the current food options on campus are very expensive and impossible to rely on for my daily food needs. A cheaper option that is close to my classes would be very helpful for me."

Community

Participants at community meal events and dialogue sessions were asked open-ended questions regarding the community that could animate a CFH at UBC-V. Participants shared that the space should be accessible to all UBC-V community members, including students, staff, and faculty, with specific mention of students who experience food insecurity as well as equity-deserving groups. Participants described the need for a CFH to provide dignified access to food, particularly for students with disabilities, food allergies and

preferences, and cultural needs and desires. Participants additionally commented on the importance of a no-barrier space, student leadership, and accessible physical design of the space. Participants also discussed signage in different languages, diversity in food offered, cultural events, collaboration with cultural groups on campus, equitable, cultural, and racial representation amongst staff, cultural sensitivity training, and convenient and consistent hours. Select responses from participants include: "People who show up at food banks are very aware that they are in need of food—all these people are here for food but that's it. Having different types of audience in the room can diversify the experience and remove stigma," and, "I think food is the best bonding experience. Healthy lifestyles can form through a community hub."

Survey responses indicating the top three preferences for features that would contribute to creating a warm, welcoming, safe, and accessible environment and community are shown in Table 6. Respondents in both surveys showed a preference for prioritizing culturally appropriate foods (targeted n=114; community n=113) and hosting cultural events (targeted n=96; community n=108). Respondents were prompted in an open-ended question to indicate additional features that would make the CFH feel accessible and safe. Responses included privacy, reducing judgment and stigma, and situating the CFH in a public area.

Evaluation

Community meal and dialogue event participants provided responses to open-ended prompts and questions on metrics for evaluating the effectiveness of a CFH. Event participants identified potential benefits that a CFH could have on students, including improved academic performance, mental health,

nutrition, and physical health, reduced food insecurity, community development, and reduced stigma for students experiencing food insecurity. Participants identified the importance of creating open avenues for feedback on a CFH. Environmental sustainability was also a key theme, including the importance of reducing waste, introducing local and organic foods, and including plant-based options. Event participants also noted that one indicator of success and effectiveness would be how positive the reputation of the CFH was on campus. One participant additionally noted that, "through feedback generated by people who use the service, we can generate insights into the effectiveness of the Food Hub."

Survey respondents also provided answers to two open-ended questions with relevance to indicators for evaluating the benefits of a CFH. Respondents from the targeted survey frequently commented on the alleviation of financial stressors, particularly as it relates to nutritious food access and greater varieties of food options. Respondents in both surveys noted that increased social connection would be an important indicator for success. Other themes mentioned across surveys included improved mental health and increased availability of cultural foods. A second open-ended question asked how a CFH could transform the health, wellbeing, and environmental sustainability of the UBC-V community. Respondents to the targeted survey mentioned increased food access, literacy, nutrition, improved mental health benefits, and the alleviation of financial stress. Respondents to both surveys discussed the importance of providing a diversity of food- and financial-related resources on campus. Other topics highlighted across surveys included improved health through social connection, community cohesion, and improved environmental sustainability.

Institutional support

Community meal and dialogue event participants were asked to envision what type of institutional support could be provided by UBC-V to the CFH project. Participants provided a variety of answers, highlighting student partnerships including student subsidies and funding, student leadership, student volunteers, paid employment for students, collaboration with student clubs, and creating student ambassadors for feedback and evaluation. Participants also discussed the ways in which UBC-V could emphasize commitment to student food security by providing physical space(s) for a CFH, an annual impact report, oversight of an annual student review of CFH programs and services, social media and media presence, support for community outreach and fundraising, and engagement of faculty and senior leadership.

Discussion

This research project was initiated due to persistently high rates of student food insecurity at UBC-V and a need to prioritize innovative solutions beyond campus food banks. The CBPAR process increased visibility and discussion of the pervasiveness of student food insecurity at UBC-V and encouraged partnership development amongst existing food system initiatives on campus. The results demonstrated high enthusiasm amongst students, staff, and faculty regarding the creation and implementation of a campus CFH to support food security. It was also apparent that a CFH needs to go beyond traditional approaches to food access. This may include support for community development and student leadership, as well as a wide range of cultural practices on campus and encouraging social connection. The central themes that emerged from the CBPAR process suggest community members want food systems that prioritize community and equity, access, affordability, and sustainability. Thus, a CFH needs to be multi-faceted, capable of fostering community and social cohesion around food as well as providing short term alleviation of food insecurity.

The findings from this project on the vision of a CFH were consistent with recent findings from UBCO as well as additional research that showed the effectiveness of community-informed, community-based food security initiatives that provided wraparound supports (Clement & Hamilton, 2020, 2021; Glaros et al., 2021). Many of the results reinforced findings from phase one and those identified by the SCDs and research team at the project outset. For example, preferences for services or amenities identified from the surveys and community engagement events reflected existing programs and services at UBC-V. However, many of these programs and services operate independently or semi-independently and are not housed in a centralized location. Thus, better connection, awareness, and amplification of existing food security initiatives across campus should be a future priority.

The targeted and community surveys generally showed similarities in responses with respect to preferences for features and resources in a CFH, which may indicate that a CFH could appeal to a broad range of community members. However, respondents to the targeted survey indicated they would access a CFH more frequently, which suggests particularly high demand for a CFH among people currently experiencing food insecurity. Compared to other studies among postsecondary students (Bruening et al.,

2017; Entz et al., 2017; Freudenberg et al., 2019), participants in the targeted survey had two to more than three times the prevalence of food insecurity-related experiences. The amenity that was most popular among respondents to both surveys was a low-cost grocery store. The next most selected amenity was a community garden. This could indicate that the most pressing issues when it comes to food security remain financial security and the provision of affordable and free options for food. However, it should be noted that there is limited evidence to suggest that the use of gardens addresses food insecurity (Huisken et al., 2016).

There were several facilitators and barriers to the process that may help to inform institutions considering implementation of AFIs or CFH. First, the use of CBPAR methodology was a significant strength that facilitated success. Throughout the research process, in phases one, two, three, and four, the SCDs developed and nurtured meaningful relationships with campus partners. These relationships supported every stage of the research, from project development to community engagement, data collection, implementation, and results dissemination. It was as a result of this partnership development that the SCDs were able to successfully engage students across diverse communities on campus, including marginalized populations and those experiencing food insecurity, who are typically hard to reach (Yancey et al., 2006).

The use of surveys, dialogue sessions, and community meals balanced the need to gather data from a larger sample (through surveys) with the need to conduct meaningful discussion on the development of a community-based and community-oriented CFH through sharing a meal and fostering dialogue. These approaches were complementary and supported the involvement of a variety of voices and perspectives into the overall project and results. Conversely, the COVID-19 pandemic was a significant barrier throughout the

research process, especially with regard to facilitating engagement. When contacting student groups to engage with, beginning in phase two during the summer, the response rate was relatively low, likely due to most student groups being on pause during this time and having competing priorities thereafter. A more diverse perspective may have been achieved with greater participation from other student groups. COVID-19-related public health restrictions on the size of in-person events throughout the duration of the project also limited the number of attendees and, possibly, the level of engagement at in-person and online community engagement events. The findings presented here may be specific to the UBC-V community. However, other institutions may benefit from using the framework articulated herein.

The breadth of responses for envisioning the CFH in this study presents a challenge for implementation. Institutions need to consider feasibility, and they may want to consider focusing on central themes that arise and a scaled approach to implementation rather than the totality of opinions, needs, and desires. For example, central themes from the CBPAR process described herein included prioritization of affordability as well as social and community development (among other aspects). Some of the suggestions put forth by respondents already existed at UBC-V, which suggests the need to consider how programs and services are promoted to community members. In the time since completion of this CBPAR project, a campus food hub market, which is centered around an at cost-grocery store, was piloted. The pilot has since evolved to a student-led not-for-profit community space that promotes social connection, cultural diversity, and affordable food (University of British Columbia, 2023). Forthcoming evaluation of the food hub may help to further inform its operation and may be of broader interest. When this project was developed, there was no

published literature on CFHs at postsecondary institutions (Murphy et al., 2022).

It is important to acknowledge that, although CFH programs and services may be able to provide temporary relief from the burdens experienced by food insecure students and a community of support and care, implementation of a CFH should not be viewed as or expected to be a comprehensive solution to food insecurity. Broad policy change is needed to address the root causes of food insecurity among students, including tuition reduction, increased financial assistance, and affordable housing options. These policy changes parallel calls to action outside of the postsecondary setting for a government-implemented basic income as the most important and effective response to food insecurity (Tarasuk et al., 2022).

Conclusion

With rising cost of living, tuition, and education costs, student food insecurity will likely persist at postsecondary institutions. Postsecondary institutions have an imperative to support both student development and wellbeing and academic success through the implementation of food security services and wraparound wellbeing supports for students, such as a CFH. The CBPAR process outlined in this paper may be a useful resource for postsecondary institutions desiring to prioritize community engagement and input in the development and implementation of such services. The findings of the CBPAR process may also help to understand and develop best practices to support student food security.

Sarah Clement (she/her) is grateful to live and work in Tkaronto, territory covered by the Dish With One Spoon Wampum Belt Covenant. She is the Health Promoter - Community Food Centre at South Riverdale Community Health Centre. Sarah received her Master of Social Work degree at UBC, and worked with UBCO Campus Health on a community-based research project that resulted in the creation of the UBCO Food Hub. Sarah is strongly committed to supporting thriving, just, and equitable food systems, and is excited to be a first time published author in CAFS!

Sara Kozicky (she/her) is grateful to work on the unceded territory of the Musqueam peoples. In her current role in the Office of Wellbeing Strategy, Sara is instrumental in planning collaborative strategies as a part of UBC's system-wide backbone unit for health and wellbeing promotion. Sara has been a dynamic leader in UBC's Food Security Initiative, where she spearheaded notable projects such as the Meal Share Program, Food Hub website and the Food Hub Market (UBC's Community Food Hub). Her current collaborative strategic focus is on embedding wellbeing in teaching, learning, and research environments.

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Appendix

Table 1. Demographic information from community engagement

	Facilitated Dialogues (n=62)	Community Meals (n=111)	Survey, Community (n=156)	Survey, Targeted (n=164)
Affiliation, n (%)				
Undergraduate student	48 (77.4)	90 (81.1)	100 (64.1)	42 (25.6)
Graduate student	4 (6.5)	8 (7.2)	25 (16.0)	74 (45.1)
Staff	6 (9.7)	3 (2.7)	2 (1.3)	3 (1.8)
Faculty	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)
Other/Missing	4 (6.5)	10 (9.0)	27 (17.3)	44 (26.8)
Age, n (%)				
Under 18	0 (0.0)	0 (0.0)	1 (0.6)	0 (0.00)
18-24 yrs.	39 (62.9)	86 (77.5)	97 (62.2)	38 (23.2)
25-34 yrs.	12 (19.4)	7 (6.3)	25 (11.4)	58 (35.4)
35-44 yrs.	2 (3.2)	2 (1.8)	3 (1.9)	23 (14.0)
44-54 yrs.	1 (1.6)	1 (0.9)	0 (0.00)	2 (1.20
Missing	8 (12.9)	15 (13.5)	30 (19.2)	43 (26.2)
Gender, n (%)				
Woman	34 (54.8)	64 (57.7)	87 (55.8)	71 (43.3)
Man	18 (29.0)	34 (30.6)	31 (19.9)	58 (35.4)
Non-binary	1 (1.6)	1 (0.90)	7 (4.5)	6 (3.7)
Prefer not to answer/missing	9 (14.5)	12 (10.8)	31 (19.9)	32 (19.5)
Residence, n (%)				
On campus	31 (50.0)	62 (55.9)	47 (30.1)	91 (55.5)
Off campus	28 (45.2)	44 (39.6)	80 (51.3)	46 (28.0)
Missing	3 (4.8)	5 (4.50)	29 (18.6)	27 (16.5)
Identity (respondents could select multiple categories), n				
2SLBGTTQIA+	9	15	34	14
Indigenous	1	3	0	4
Racialized	19	39	34	33
Disability	1	1	8	10
First generation student	10	11	21	14
International student	11	19	41	75
Student with child(ren)/ dependents	1	1	5	37
Food Security, n (%)				
Has received financial assistance to pay for university	18 (29.0)	26 (23.4)	47/128 (36.7)	43/138 (31.2)
Often true or sometimes true to worrying about running out of food in the last year	27 (48.2)	38 (37.2)	73/128 (57.0)	103/138 (74.6)

Has received food assistance (e.g., food hampers, food bank, UBC Meal Share)	13 (23.2)	16 (15.7)	48/128 (37.5)	121/138 (87.7)

Abbreviations: 2SLBGTTQIA+: two-spirit, lesbian, gay, bisexual, transgender, intersex, queer/questioning, asexual, and additional identities (e.g., non-binary and pansexual). Denominator shown for targeted and community questionnaires as not all participants responded to the food security question.

Table 2. Responses from the online survey: Preferences regarding physical space of a CFH

Physical space, n (%)	Targeted (n=164)	Community (n=156)
New physical food hub space(s) that bring together food security and wellbeing resources	62 (37.8)	65 (41.2)
Integrating food hub elements into spaces that are already familiar to you/access often rather than new space	92 (56.1)	77 (49.4)
No physical food hub space but better coordination/partnerships between existing food security resources/spaces	10 (6.1)	14 (9.0)

Responses to the heading, "envisioning a food hub," and the question, "what is more important to you…"

Table 3. Responses from the online surveys: Preferences for amenities of a CFH

Amenity, n	Targeted (n=164)[1]	Community (n=156)[1]
Communal fridge/food storage space	56	56
Drop in cooking space	47	63
Kitchen equipment rental	51	38
Low-cost grocery store	133	127
Community garden/space to grow food	65	74
Meeting space	34	24
Social lounge space	37	51
Professional staff (e.g., dietitian)	48	30

Responses to the question, "Select top three choices of amenities provided by the food hub" [1]Participants could select more than one option, and thus n is presented in lieu of percentages

Table 4. Responses from the online surveys: Frequency of access for a CFH

Frequency of access, n (%)	Targeted (n= 151)	Community (n=143)
Never	2 (1.3)	8 (5.1)
Rarely (once/year)	3 (2.0)	5 (3.2)
Occasionally (every few months)	23 (15.2)	30 (19.2)
Frequently (once/month)	48 (31.8)	60 (38.5)
Very frequently (once/week)	72 (47.7)	37 (23.7)
Always (daily)	3 (2.0)	3 (1.9)

Responses to the question, "How often would you access the food hub?"

Table 5. Responses from the online surveys: Preferences for programs and resources for a CFH

Program/resource, n	Targeted (n=164)[1]	Community (n=156)[1]
Mental health support	70	48
Academic enrollment and advising	36	31
Financial support and planning	99	64
Food skills workshops	44	62
Nutrition peer coaching	43	49
Emergency food access	86	74
Community meals	78	95
Connecting with other students	35	40

Responses to the question, "Select top three choices of programs, connections, and resources provided by the food hub".
[1]Participants could select more than one option, and thus n is presented in lieu of percentages

Table 6. Responses from the online surveys: Accessibility of a CFH

Accessibility, n	Targeted (n=164)[1]	Community (n=156)[1]
Culturally appropriate foods	114	113
Cultural events	96	108
Ambience	60	85
Resources in multiple languages	36	22
Peer support	56	44
Accessible design of physical space	44	41

Responses to the question, "Select top three aspects of the community food hub that would make it feel warm, welcoming, safe, and accessible for you and your peers?"
[1]Participants could select more than one option, and thus n is presented in lieu of percentages