



Communication: The key to successful community garden initiatives

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Abstract

Community gardens (CGs) are collectively cultivated plots of land which have gained traction in both the public health and education sectors. Previous research indicates involvement in such initiatives can holistically improve the health of communities and encourage experiential learning. However, to date, little is known about strategies and tools to improve communication amongst organizers and with potential volunteers. This action-learning project aimed to identify and evaluate a communication plan and accompanying tools relevant to the AUT community garden initiative (AUT CGI). To do this, a user-centered strategy and accompanying tools were developed, then evaluated through expert interviews. The conceptual framework was “action learning” with a mixture of methods across six distinct phases, including an examination of the current literature, preliminary expert interviews, thematic analysis of data, development of the strategy and accompanying tools, evaluative interviews, and final thematic analysis. Common themes from the literature, community observation, and preliminary interviews informed the development of the strategy and tools. Three key themes identified with CGs were communication, collaboration, and utility of tools. These findings are in accordance with existing health promotion (HP), health communication (HC), and CG literature, highlighting the importance of, and challenges to, communication, collaboration, and implementation of user-friendly tools, relevant to CG initiatives.

Introduction

Co-operative education (a form of work-integrated learning or WIL) aims to seamlessly integrate theory and practice, through the implementation of action-learning, a sub-set of action research (Ferkins & Fleming, 2007). The following project was undertaken for the Auckland University of Technology (AUT) Human Potential Centre (HPC) during a year-long part-time WIL placement to address the lack of effective communication related to the AUT CGI. This issue was identified, during an organizational analysis assessment, as a barrier to its success. This is common with CGs, regardless of their classification, who rely predominantly on volunteers for upkeep (Litt et al., 2011). Poor communication can be detrimental, hindering effective collaboration; subsequently, the achievement of the communal space's aims as communication is the basis of successful collaboration and partnerships (Kemmm, 2014; Nolan & March 2016; Schneider, 2013).

A growing interest in holistic community health promotion (HP) initiatives like CGs in New Zealand (NZ) and globally can be attributed to their unique ability to address the multifaceted nature of health, multiple health risk factors, and common environmental barriers with a single user-centered intervention (Armstrong, 2000; Bice et al., 2018; Noy, Patrick, Henderson-Wilson, Nuttman, & Ryan, 2019). Several potential benefits are associated with participation in CGs, including improved physical activity, diet, physiological indicators, well-being, and mental health, cognitive function (elderly), and food security (Al-Delaimy & Webb, 2017; Bice et al., 2018). Furthermore, CGs provide opportunities for health-related education, social cohesion, collective efficacy, integration of new immigrants, empowerment, and additional income for volunteers (Al-Delaimy & Webb, 2017; Bice et al., 2018). The AUT CGI is both an HP initiative and an educational tool used for experiential learning opportunities for students and staff thus allowing them to gain practical insights into nutrition and food, wellbeing, and sustainability (Rogers, Livstrom, Roiger, & Smith, 2020). Therefore, it can be classified as a lifestyle approach to community HP focusing on behavioral modification and education through active participation in an "open-air classroom". The lifestyle approach makes it a popular way to manage HP in schools for combating the global obesity epidemic and related risk of non-communicable disease (Bice et al., 2018; Laverack, 2014; Siewell, Aguirre, & Thomas, 2015; World Health Organisation, n.d.).

To date, effective communication tools and strategies for CGs are unknown. This action-learning project aimed to address the role of communication-related to CGs in a tertiary institution in NZ by developing and evaluating a communication plan and accompanying tools based on literature, observation, and expert interviews. Hopefully, by highlighting effective communication tools, this project will lead to improved collaboration within the university and the local community to improve the health and educational outcomes of students, staff, and the local community.

Literature review

Globalization, rapid urbanization, disconnection from nature, and poor health outcomes related to nutrition and physical activity have a global effect on health and wellbeing (Dubová & Macháč, 2019; Rogers et al., 2020). The literature surrounding CGs, and their benefits are extensive, highlighting their robust applicability and efficacy in a range of settings (Al-Delaimy & Webb, 2017; Bice et al., 2018; Egli, Oliver, & Tautolo, 2016). This review was used to inform the development of the communication tools developed as part of the action learning project and examines the benefits and coordination of CGs, as well as the importance of communication and collaboration with the surrounding community.

Benefits of community gardens

Community gardens provide an environment for experiential learning, holistic community-led HP initiatives, and improvements to health. This communal, holistic, and inclusive approach empowers volunteers and participants (Armstrong, 2000; Nnakwe, 2012). (Armstrong, 2000; Nnakwe, 2012). CGs can encourage behavioral change (related to nutrition and physical activity), promote self-empowerment (through learning new skills and knowledge), and promote collective action. Experiential learning is an approach fostering the development of skills, knowledge, and attitudes based on reflection of experiences then is linked to the promotion of environmental awareness, enhancement of academic learning, and the encouragement of personal and social development (Rogers et al., 2020). School gardens in early childhood centers and primary and secondary schools in NZ are commonplace and motivations for their establishment include: aligning with the ‘enviroschools’ movement, forging partnerships with the local community, and promoting school values (Dawson, Richards, Collins, Reeder, & Gray, 2013). Although common, school gardens are often cumbersome to maintain and need a champion (or group) to take charge of the space (Collins, Richards, Reeder, & Gray, 2015; Dawson et al., 2013). In tertiary education, they can be used to extend teaching beyond the classroom and allow students (particularly in the health sciences) practical opportunities to engage with the public and practice vital vocational skills (Siewell et al., 2015). They offer a space to promote personal and social development and could be a viable tool to teach undergraduates ‘soft-skills’ including communication, leadership, collaboration, and critical thinking, all valuable aspects of employability (Clarke, 2018; Rowe & Zegwaard, 2017).

Participation in CGs may yield benefits to physical, psychological, social, and cultural or spiritual health. Physical benefits include improved management of type 2 diabetes in Marshallese immigrants (Weltin & Lavin, 2012). and lowered body mass index in children and adults (Castro, Samuels, & Harman, 2013; Zick, Smith, Kowaleski-Jones, Uno, & Merrill, 2013). In the US, Australia, and Portugal several observational studies have shown individuals (both children and adults) involved in CGs reporting an increase in fruit and vegetable intake (Alaimo, Packnett, Miles, & Kruger, 2008; Barnidge et al., 2013; Castro et al., 2013; Hanbazaza et al., 2015; Heim, Bauer, Stang, & Ireland, 2011; Litt et al., 2011; Palar et al., 2019; Paulo, Elisabete, Benedita, & Margarida, 2020; Wakefield, Yeudall, Taron, Reynolds, & Skinner, 2007). Psychological benefits including improved wellbeing (people’s subjective evaluation of their lives), self-esteem, and mood have been linked with volunteering in CGs and can be attributed to the ‘calming’ and ‘restorative’ effect of time in nature (Baur, 2020; Genter, Roberts, Richardson, & Sheaff, 2015). While social benefits include community cohesion, collective efficacy, and collective resilience (Teig et al., 2009). These phenomena describe the mutual trust and willingness to intervene for the common good and are linked to positive outcomes in public health (Lanier, Schumacher, & Calvert, 2015; Shimpo, Wesener, & McWilliam, 2019; Teig et al., 2009). CGs can be “non-commercial third places” which transcend gender, culture, and age to establish social networks and develop social capital in a collaborative, communal manner (Genter et al., 2015; Kingsley, Bailey, et al., 2019; Kingsley, Foenander, & Bailey, 2019). As ‘non-commercial third places’ they can foster cultural identity (Hartwig & Mason, 2016; Hond, Ratima, & Edwards, 2019) and spiritual health (Hond et al., 2019). Although the benefits of CGs are well documented, little is known of the most effective tools and strategies to manage and coordinate such spaces and support robust communication amongst organizers and volunteers.

Management and coordination of community gardens

Adequate management of CGs and achievement of related benefits requires collaboration between diverse stakeholders, accomplished with effective communication (Clendon & Munns, 2018; Jackson, 2010; Kemm, 2014; Provan, Fish, & Sydow, 2007; Schneider, 2013). Table 1 outlines common barriers and enablers to successful CGs. The development of a communication strategy and accompanying tools could help mitigate some of the barriers highlighted, including skills (through knowledge sharing), organizational structure, and scheduling and coordination. The dissemination of information and knowledge is the most frequently mentioned enabler to successful CGs (Wessener, Fox-Kämper, Sondermann, & Munderlein, 2020). Therefore, the establishment of strategies and tools to allow for this is important. A communication strategy and tools would also provide the opportunity to enhance public relations and marketing to encourage external parties to participate and contribute to sustaining the initiative (Wessener et al., 2020).

Table 1

Barriers and Enablers to Successful CGs

Barriers	Reference	Enablers	Reference
Sustained interest and community engagement	Drake & Lawson, 2015; Diaz et al., 2018; Wessener et al., 2020	Networking and partnerships / collaboration	Drake & Lawson, 2015; Diaz et al., 2018; Collins et al., 2015; Nolan et al., 2016
Land tenure or space	Diaz et al., 2018; Collins et al., 2015; Dawson et al., 2013; Wessener et al., 2020	Opportunities for knowledge sharing	Collins et al., 2015; Dawson et al., 2013; Wessener et al., 2020
Insufficient funding	Diaz et al., 2018; Collins et al., 2015; Dawson et al., 2013; Wessener et al., 2020	Sufficient, sustained sources of funding	Wessener et al., 2020
Time commitments	Diaz et al., 2018; Collins et al., 2015;	Opportunities for development	Dawson et al., 2013
Inadequate access to skills or resources	Diaz et al., 2018; Collins et al., 2015; Wessener et al., 2020	Planners actively involved	Nolan et al., 2016
Organisational structure (policies and procedures, fee structure, garden management plan)	Diaz et al., 2018;	Adequate access to skills or resources	Wessener et al., 2020
Lack of ongoing internal leadership	Diaz et al., 2018; Wessener et al., 2020	Maintaining good communication	Nolan et al., 2016
Scheduling and co-ordination	Diaz et al., 2018;	Ongoing internal leadership of governance	Wessener et al., 2020

Communication and collaboration with the community

Health communication (HC) is, “the study and use of communication strategies to inform and influence individual decisions that enhance health” and includes spoken, written, and gestured communication and the accompanying tools (Allen et al., 2017, p.2). Various channels exist to communicate with volunteers, including mass media, print material, and electronic communication (e.g., email, phone, websites) (McKenzie, Neiger, & Thackeray, 2013). HC experts emphasize the importance of considering user-centered communication to target their audience, along with their digital and health literacies, when selecting tools and channels to

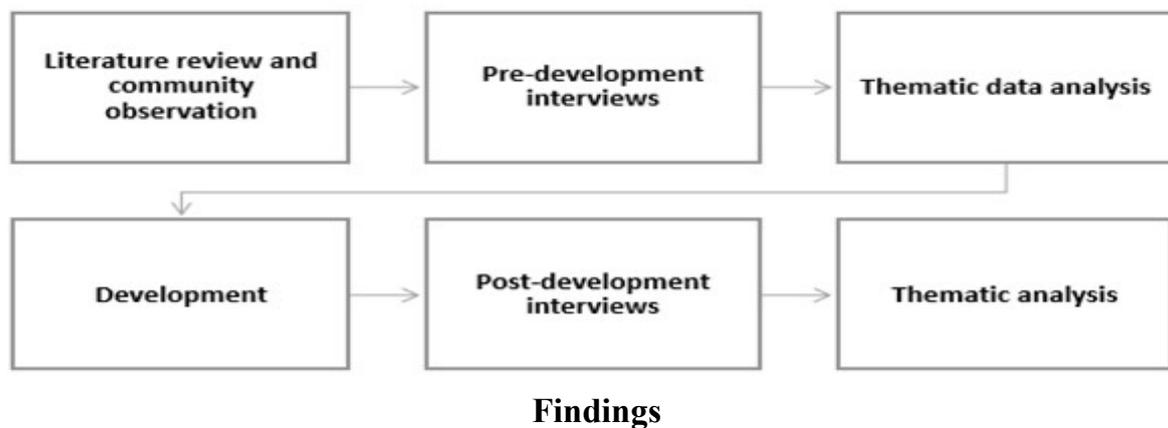
ensure meaningful engagement can occur (Allen, Auld, Logan, Montes, & Rosen, 2017; McKenzie et al., 2013; Stellefson, Paige, Chaney, & Chaney, 2020). The four traditional channels include interpersonal (i.e., small group), intrapersonal (i.e., one-on-one), organization and community (i.e., a bulletin board), and mass media (McKenzie et al., 2013). There is mounting interest in the applicability of social media to HP due to the fact it is cost-effective and can be used to reinforce relationships between stakeholders and promote inclusivity (Stellefson et al., 2020; Zhu, Xu, Zhang, Chen, & Evans, 2020). The use of TikTok (a video-based social media application) by district health boards in China was found to be an appropriate channel to communicate with the public (Zhu et al., 2020). This can be attributed to social media and digital technology (e.g., websites) encouraging a multidirectional communication model whereby participants receive and actively seek, develop, and share information through social media posts (McKenzie et al., 2013).

Studies examining communication between HP collaborators report internal communication issues are a barrier to CG success, however, it is unknown which tools and channels are most effective for communication between collaborators in this unique environment (Wesener et al., 2020). A lack of effective communication can result in unsuccessful collaboration or partnerships; thus, failing to deliver on key outcomes (Fertman & Allensworth, 2017; Kemm, 2014; Laverack, 2014). A study examining the reasons a CG failed in urban Australia highlighted the need for maintaining good communication (Nolan & March 2016). A lack of communication has hindered the success of CGs because, without it, partnerships and opportunities for collaboration cannot be identified or established (Diaz, Webb, Warner, & Monaghan, 2018; Drake & Lawson, 2015). Despite this knowledge, to date, there are no studies examining effective communication plans and tools for CGs, particularly in a tertiary education setting.

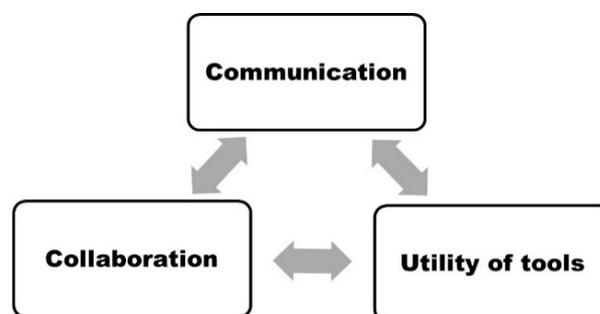
Methods

The conceptual framework applied to this project was “action learning”; a subset of action research that promotes learning through action and reflection (Ferkins & Fleming, 2007). This approach facilitates collaboration between industry and tertiary education institutions to promote the education and employability of the graduate (Ferkins & Fleming, 2007). The purpose of such a framework is to allow students to undertake and understand the requirements of undertaking a research project. This framework was followed by adhering to the research, action, and reflection stages to develop and evaluate a communication strategy and accompanying tools for the AUT CGI.

To undertake this multi-phase, qualitative action-learning project, a mix of methods incorporating observation and interviews was utilized, Figure 1 depicts this. Pre-development stages informed the design of the communication plan and accompanying tools, whilst post-development interviews were used to determine the potential efficacy of the proposed strategy and tools based on expert opinions. Unfortunately, due to the impact of COVID-19 implementation (launching the website and erecting the communication board) and quantitative evaluation (surveys administered to students, experts, and volunteers) was not possible. Therefore, this action learning project resulted in the creation of three resources (a communication plan, and website and communication board plans) and the identification of three broad themes related to communication and CGs. The plans are to be used by subsequent students undertaking action-learning projects to launch the website and erect the communication board and assess efficacy and engagement with relevant groups (staff, students, volunteers).

Figure 1*Flow Diagram to Illustrate Methods used in Project*

Following the literature review, community observation, and collation of both thematic analyses (pre and post design of the communication tools), three key themes were identified: communication, collaboration, and utility of tools. These interconnected themes are displayed in Figure 2. Findings indicate how successful communication is reliant on collaboration and user-friendly tools. Relevant themes and subthemes are presented with quotes from interviews to substantiate findings.

Figure 2*The Interconnected Key Themes Identified During the Project*

Challenges to communication

The lack of a systematic approach to communication and time constraints were cited as the two main challenges to communication. Preliminary interviews highlighted a need for, "...getting a systematic approach. Getting a streamlined, systematic, step of you want to be involved this is what you need to do (i1)." When questioned about the current approach to communication regarding the AUT CGI, one interviewee replied, "...there is no planned communication strategy" (i2). Whilst another commented; "...people are interested it's just that they often don't know where to go and who to talk to" (i3). There was an acknowledgement of the tools for communication existing, "Ah yeah, they currently exist" (i2); however, they were not currently being used effectively or systematically and as a result were unsuccessful "I just don't think we use them effectively (i1)". Following the development of the tools, a website, and a communication board, post-development interviews revealed all (3/3) interviewees felt the proposed strategy and tools would help mitigate communication challenges and streamline communication. Interviewees agreed a centralized email address, where all inquiries could be directed, would be useful. One interviewee commented, "... [a]

centralized email address for steering committee members is really good (i1).” Interviewees believed digital tools (e.g., website and social media) were an effective way to communicate with students, one interviewee highlighted, “...students... [are] tech-savvy (i3).” Whilst the communication board was viewed as a valuable tool to “draw” (i3) people to the space; there was concern, “... [it] only captures people walking by (i2)”. These findings highlight the need for a systematic approach to communication-related to the AUT CGI was adequately addressed through the communication tools.

The second challenge highlighted during preliminary interviews was time constraints and logistical barriers to communication amongst the steering committee. One interviewee’s comments encapsulated this challenge when they stated, “...communicating takes a lot of work (i4)” and, “Meeting would be the preference but its logistically not practical (i4)”. These comments highlight the fact people are “busy (i2)” and “regular communication is difficult (i2)”. Despite strong views from interviewees regarding meetings, they were deemed time-consuming and logistically difficult to plan for. Meetings were mentioned 11 times across the four interviews, with one interviewee mentioning it 7 times. Therefore, scheduled quarterly meetings were incorporated into the communication strategy as it allows opportunities for committee members to “bounce ideas around (i3)”. The format of these meetings was not established; however, with the impact of COVID-19 and movement toward remote working, these could likely take place via online platforms. Interviewees were concerned with the logistics of implementing the quarterly meetings, highlighting the need for “action points (i1)” and “process around confirming agenda items and stuff like that (i2)”. This once more highlights the need for a driver, champion, or coordinator. A regular email was mentioned 21 times across four interviews with one interviewee mentioning it 10 times and was encouraging daily communication between committee members.

Key information to communicate

Key information needs to be communicated amongst the steering committee and with potential volunteers; for this project, this information was referred to as internal (vital for the steering committee) and external (vital for potential volunteers). Community observation and interviews highlighted the need to adequately communicate key information with potential volunteers to create an “understanding (i2)” amongst volunteers and encourage “everyone to respect each other (i2)” when engaging with the space. Three key areas identified by interviewees included what is going on or events (mentioned 9 times), getting involved (mentioned 5 times), and contact details (mentioned 5 times). Interviewees noted potential volunteers need to know, “What it is, what’s going on, what are the events, and what they can do if they want to help. And who to contact (i1)” and the “technical details, correct way of carrying out the projects... (i3)”. Technical details and educational resources were viewed as less important, only being mentioned 3 times. Finally, the creation of a narrative for the space was highlighted by one interviewee when they stated, “...tell them about the kaupapa [plan or purpose] and what we are trying to do (i4)”. The sentiments shared by interviewees aligned with information shared with potential volunteers on local NZ CG websites. Following the development of the communication tools for the AUT CGI, thematic analysis of the evaluative interviews revealed all (3/3) interviewees felt the communication tools communicated all key information with potential volunteers. One interviewee highlighted the need and opportunity to incorporate other communication tools stating they would be inclined to; “QR code some of those things” and have “online videos” because “how people learn” varies (i2).

During preliminary interviews, the need to communicate key information within the steering committee was highlighted. Interviewees felt a need to identify and illustrate “opportunities for staff engagement (i2)” and “what projects are on at particular year time, and

how they fit into the grand plan (i3)". One interviewee believed this approach would mitigate "conflicts between different groups wanting to do different things (i3)". Following the development of the communication tools for the AUT CGI, thematic analysis of the evaluative interviews revealed all (3/3) interviewees felt the communication tools would streamline communication within the committee and communicate relevant information. However, there was concern the benefits of the space were not adequately communicated; interviewees stated, "mental health benefits (i2)" and how the space contributes to the "SDG's [Sustainable Development Goals] (i2)" and "what is currently being done [in the CG] to make it [AUT] carbon-free (i1)" would validate the expansion of the initiative from an organizational perspective.

Collaboration: challenges and creating a sense of purpose, belonging, and community

Co-ordinating interests of diverse groups were identified, and interviewees highlighted how the absence of "processes (i2)" created "conflicts (i3)" between "different groups, on different campuses, [with] different agendas (i3)" and hindered effective collaboration in the past. Furthermore, one interviewee commented; "... all have their own idea of what they want to do (i3)", whilst another highlighted the reach of the initiative as it grows and expands, "...how we manage those relationships [with diverse groups] is going to be a hurdle (i2)". All (3/3) interviewees felt the communication tools would enhance collaboration and engagement with the initiative and are a "good start (i1)".

The 'creation of a sense of purpose, belonging, and community' related to the space and pertains to volunteers was mentioned during preliminary interviews, interviewees highlighted this by commenting; "... it's for everyone to enjoy (i2)" and volunteers should "have a sense of involvement (i3)" and be able to feel "pride (i3)" in what they have contributed to the space. This was further articulated by two interviewees who commented; "... the garden is not just a garden. It's a place to try and connect (i4)" and "this is an ideal project to support both the environmental and social aspects of sustainability (i2)". This highlights the importance of the creation of a culture for the space through communicating the aims and values and developing it as a 'third non-commercial space' to foster community. Following the development of the communication tools, the thematic analysis revealed that all (3/3) interviewees felt the aims and values of the space were adequately communicated with potential volunteers. However, there was concern the AUT value of 'acknowledging achievement' was not included from two of the three interviewees. They commented 'achievement' could be classified as people "actually doing things in the garden (i1)" and this could be recognized through "a big photoshoot of all the volunteers" (i1) which could then be shared through relevant communication channels or incorporation of AUT CGI volunteering into the "AUT Edge Awards (i2)". The key aims and values of the space are adequately communicated with volunteers, however; whether the AUT CG is considered a 'third non-commercial space' to foster community is unknown.

Utility of tools

The 'utility of internal tools' pertains to whether the selected tools are appropriate for communicating within the committee. Digital forms of communication were favored and mentioned 31 times; comparatively, interpersonal communication was mentioned 11 times. One interviewee stated "[it is] something that nobody has to pick up straight away (i3)" as the reason digital tools (e.g., email) are beneficial. Therefore, emails and use of an online platform were incorporated as the main form of communication amongst the committee. All (3/3) interviewees believed the proposed communication tools for internal use were user-friendly. However, there was concern a "driver (i1)" needed to be appointed who would be responsible

for replying to emails through the centralized email system, chairing meetings, and approving projects. This was beyond the scope of the current action-learning project.

The ‘utility of external tools’ was identified during post-development evaluative interviews. During evaluative interviews, only two-thirds of the interviewees felt the website was user-friendly. Interviewees highlighted it was “... hard to tell from the PDF (i2)” whether the website would be easy to use but “it’s got all the right data (i2)”. All (3/3) interviewees felt the communication board was user-friendly and highlighted how the board should be a “fluid (i1)” and a “living board (i3)” and certain information communicated should be “permanent (i3)”. This is because members of the public can access the board and we do not want key information to be erased or the board to be vandalized; therefore, a system or process to back up information on the board is crucial.

Discussion

The findings from this action-learning project indicate interviewees felt the communication plan and tools were relevant, user-friendly, and would improve communication and encourage collaboration once introduced. Therefore, the aim to develop and evaluate a communication plan and tools were met. However, it is worth noting that due to the limited interviews conducted, to ascertain whether this plan and accompanying tools will enhance engagement with volunteers, students, and staff outside of the CGI committee, requires further research. The major findings related to each of the three themes (communication, collaboration, and utility of tools) are discussed below with reference to relevant literature.

Communication: importance, challenges, and key information

The importance of effective communication was highlighted by interviewees is in accordance with HP (Fertman & Allensworth, 2017; Kemm, 2014; Laverack, 2014) and HC literature (Ngigi & Busolo, 2018; Ruben, 2016) and studies examining CG success (Nolan & March 2016; Wesener et al., 2020). CGs require strategies to allow meaningful engagement with, and support from the community, this can be linked to the notion of a ‘systematic approach’ identified during the present action learning project which highlights the interconnectivity of knowledge sharing and collaboration (Collins et al., 2015; Dawson et al., 2013; Diaz et al., 2018; Drake & Lawson, 2015; Fox-Kämper et al., 2018; Nolan & March 2016; Wesener et al., 2020). Communication is discussed below in relation to importance, challenges, and key information.

Interviewees identified communication as the key to establishing understanding amongst collaborators or organizers and engaging participants or volunteers; a notion supported by widespread consensus in HP literature (Kreps, 2009; Ngigi & Busolo, 2018; Nkanunye & Obiechina, 2017; Ruben, 2016). Hamlin, Yule, Elliot, Stoner, and Kathiravel (2016) found the NZ-based Green Prescription initiative, providing activity prescriptions to at-risk patients, had limited success due to ineffective communication and collaboration. Participants in this retrospective study reported health care workers (general practitioners, specialists, and Green Prescription community health workers) did not communicate effectively with one another (Hamlin et al., 2016). This indicates the importance of internal communication to deliver effective and engaging HP initiatives for encouraging behavioral change. Despite this knowledge supported by findings of qualitative studies indicating communication can be a significant barrier or enabler to the success of CGs (Nolan & March 2016; Wesener et al., 2020); to date, there are no studies examining effective strategies or tools for this HP setting. An understanding of communication strategies for CGs to engage with local communities, create a ‘shared vision’ amongst organizers, and encourage knowledge-sharing

does not exist. The findings of this project re-iterate the importance of communication for successful CGs.

Communication is a complex process with several factors potentially interfering and hindering effective dissemination of information and knowledge sharing in HP contexts (Ruben, 2016). Effective communication requires a conscious effort from all parties, with three main challenges to this being, the lack of a systematic approach and time constraints, and logistics. A systematic, planned approach and the establishment of processes for effective communication is a theme consistent with HP literature (Fertman & Allensworth, 2017; Kemm, 2014; Laverack, 2014), HC literature (Kreps, 2009; Ngigi & Busolo, 2018; Nkanunye & Obiechina, 2017; Ruben, 2016), and studies examining CGs (Drake & Lawson, 2015; Wesener et al., 2020).

Strategies and tools to share information, knowledge, and engage with the public are significant enablers to the success of CGs in NZ and Germany (Wesener et al., 2020). Moreover, inadequate communication is directly related to the failure of CGs; however, communicative planning theory is a viable model to promote good communication in CGs (Nolan & March 2016). These findings reinforce the comments made by interviewees regarding the proposed communication strategy and its potential to mitigate challenges related to internal and external communication.

Interviewees highlighted being busy; their involvement being outside the scope of their job description and making time to communicate and connect with other committee members as logistically difficult due to conflicting schedules and commitments. This finding was not unexpected; CG's are inherently community-based, relying on the ongoing support and commitment of volunteers (Wesener et al., 2020). They can be organized and managed in two distinct ways: top-down or bottom-up (Fox-Kämper et al., 2018). The first relates to CGs established, organized, and managed by the health board and local authorities for community volunteers to engage in. The second relates to communities coming together to establish, organize, and manage CGs (Fox-Kämper et al., 2018). The AUT CG is technically bottom-up established by staff members, that have acted in a voluntary capacity, and gained approval from the university to create a CG on campus (Fox-Kämper et al., 2018). Therefore, the AUT CGI and its steering committee are not dissimilar to a local community group who have established and manage a CG; subsequently face similar challenges.

The evaluation of the strategy and tools did not consider whether it would be feasible to use them given the above time constraints. A garden coordinator may be a worthwhile addition to the team; however, this would require interest and funding from an organizational perspective. Considering the potential benefits of incorporating CGs into tertiary education institutions, there is a need to communicate the potential benefits, to health, education, and sustainability, with the organization (Baur, 2020; Egli et al., 2016; Siewell et al., 2015; Twiss et al., 2003). Egli et al. (2016) developed a model to communicate the benefits of CGs; however, it focuses primarily on health benefits and does not consider the educational or sustainability benefits. A model communicating the health, educational, and sustainability benefits, in line with the United Nations sustainable development goals, may enhance understanding, acceptability, and funding of such initiatives in tertiary education institutions.

Key information was identified as; what is the initiative, how to get involved, and who to contact. This is in accordance with findings from qualitative studies of CGs indicating the creation of a 'shared understanding' or 'vision' is key to the success of such initiatives and is based on purposeful information sharing (Hond et al., 2019; Kingsley, Bailey, et al., 2019; Nolan & March 2016; Teig et al., 2009; Wesener et al., 2020).

Collaboration: Challenges and the sense of community

Collaboration defined as the creative and collective approach to tasks involving two or more people is a key determinant of successful HP, as initiatives are conceptualized and implemented by multiple collaborative stakeholders (Jackson, 2010; Kemm, 2014; Laverack, 2014). The importance of collaboration for the success and sustainability of the AUT CG was highlighted during this project; this is concurrent with recent studies pertaining to the importance of early and robust collaboration (Nolan & March 2016; Wesener et al., 2020). Two main subthemes were identified concerning collaboration (challenges, and sense of community), these are discussed below with reference to relevant literature.

The coordination of diverse groups and potential conflicts is a barrier to collaboration. This is in accordance with findings from Nolan and March (2016) and Wesener et al. (2020) whose studies found; due to the communal nature of CGs, co-ordination of diverse groups was to be expected; however, if not appropriately managed, could be a barrier to the success of the initiative. Although the committee believed the centralized email address for queries and a process for garden project approval is a viable starting point, there is a need for health and safety and garden related processes to be communicated with potential volunteers. Therefore, to extend the reach of this initiative relevant processes to ensure successful coordination between diverse groups to mitigate conflicts must be established.

Interviewees identified the social importance of the AUT CGI by referring to it as “a place to connect (i4)” therefore addressing the “social aspects of sustainability (i2)”. Interviewees believed the AUT CGI could be a ‘third non-commercial space’ to foster community spirit; a notion supported by studies indicating they have the power to transcend age, culture, gender, and race, and connect people through a common goal and a shared vision (Hond et al., 2019; Kingsley, Foenander, et al., 2019; Nolan & March 2016; Teig et al., 2009; Wesener et al., 2020). Hond et al. (2019) explored the use of CGs for the development of cultural identity in Māori communities. This inaugural NZ study explored motivations for the establishment of Māori māra (gardens or cultivations) with themes of community development and cultural identity cited as significant motivators (Hond et al., 2019). This finding is similar to Hartwig and Mason (2016), a study of immigrants and refugees in America, who found refugees enhanced their cultural identity and sense of belonging in their new country through participation in CGs. These studies indicate the social aspect of CGs is an important means of giving volunteers a sense of purpose and belonging and aiding in the development of a diverse social network (Teig et al., 2009).

These findings indicate the immense power of CGs to develop the social aspect of communities. However, interviewees in the present action-learning project felt without incentivization and acknowledgement of involvement, volunteers may not interact with the AUT CGI; therefore, it would not become a ‘third non-commercial space’ and would not have the power to foster community and cultural identity.

Utility of tools

The utility of tools pertains to how user-friendly the interviewees felt the proposed communication tools were. Overall, a preference for digital communication amongst the committee and with potential volunteers arose. Therefore, the inclusion of a website, and convergence with social media platforms, is in line with user preferences indicating the development was ‘user-centered’, a key aspect of successful communication in HP (Allen et al., 2017; Kreps, 2009; Stellefson et al., 2020). In recent years, there has been a shift toward digital platforms to communicate health messages as they allow for greater information sharing, community building, and engagement with stakeholders in a cost-effective manner (Stellefson et al., 2020; Zhu et al., 2020). Indicating these types of tools and channels are viable

alternatives to traditional communication tools and channels. Recently, the applicability of Twitter (Park, Reber, & Chon, 2016) and TikTok (Zhu et al., 2020) have been examined in different health settings and found to be favorable with consumers due to the brevity and interactive nature of these messages and tools. This indicates the inclusion of online platforms (i.e., the website and social media pages) is in accordance with current practices in HP and HC.

Interviewees highlighted further work is required to identify relevant tools to interact with staff and community volunteers. Identification of alternative tools was beyond the scope of the current project and future work could explore whether notice boards, fliers, emails, text messages, websites, social interactive media, or cell phone applications are effective tools to communicate with older populations. Unlike students, staff and community volunteers may be older and less comfortable with digital forms of communication (such as a website, social interactive media platforms, or cell phone applications). These comments are in line with HP and HC literature highlighting the importance of identifying whether your target audience uses or is ready to use a given digital or social media platform (McKenzie et al., 2013). Overall, the comments related to the utility of the tools were positive and indicated they were user centered.

Conclusion

This action-learning project aimed to develop and evaluate a communication plan and tools to address the current lack of successful communication related to the AUT CGI. The plan and accompanying tools were user-centered and developed in accordance with relevant literature, expert interviews, and community observation. The findings highlight the importance of, and challenges related to communication, collaboration, and implementing user-friendly tools relevant to CG initiatives and align with previous HC literature.

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