



# Developing an obesity-cancer intervention for workplaces: Indigenous, Native American, Māori and other minority occupational settings

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## Abstract

There is growing evidence for links between obesity and certain types of cancer. Studies done within Native American, Māori, and other Indigenous populations suggest the need to promote healthier lifestyles, including the

maintenance of optimal body weight through nutrition and physical activity, to lower the risk factors of obesity-related cancers. What is missing is a program that combines culturally attuned workplace interventions that deal with obesity reduction as it relates to cancer prevention. The main purpose of this project was to discuss the process of developing an employee assistance program module to reduce the risk for obesity-related cancers. Expert curriculum developers specialising in workplace disease management assisted with the creation of a unique obesity and cancer prevention program. Several national leaders in Indigenous and minority health were consulted for feedback. The completed intervention included a six-session model with cultural features wrapped around topics of obesity-related cancer warning signs, diet and physical activity guidance, stress management, goal-setting, and resource linkage. A Native American workplace was selected for feasibility and pilot testing. Preliminary results are also discussed. Ultimately, this paper presents a novel intervention approach to address health issues for Native Americans, with indicators for use in other Indigenous populations globally.

**Keywords:** EAP, employee assistance program, employee health, workplace health, Māori, Native American, American Indian, Indigenous, obesity, cancer, disease management, minority health, intervention, counselling.

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## Introduction

Observational studies have indicated that avoiding weight gain lowers the risk of cancers of the colon, breast, endometrium, kidney, and oesophagus in the United States (National Cancer Institute, 2012). Further, a rigorous review of more than 7,000 studies on the relationship between nutrition, physical activity, excess weight, and cancer risk reveals growing evidence of an association between obesity and the increase of several cancers (Eheman et al., 2012). However, few of these studies involved minority or Indigenous populations despite the higher risk for both obesity and cancer among Native Americans, Māori, and Indigenous populations around the world (Anderson et al., 2016).

Steele, Cardinez, Richardson, Tom-Orme, and Shaw (2008) reported that Native Americans have a greater prevalence for obesity and lower levels of colorectal screening. Findings also show that cancer death rates in the U.S. have declined by more than one percent; however, historical data (1999-2008) indicates this trend is not true for Native Americans, for whom rates have remained stable (Siegel, Naishadham, & Jemal, 2012). Further, Native Americans have also

experienced significantly higher mortality rates for cancer of the stomach, gallbladder, and cervix (Michielutte, Sharp, Dignan & Blinson, 1994; Michalek & Mahoney, 1994). Kidney cancer incidence and death rates are the highest among Native Americans; the higher prevalence of obesity in this population may contribute to this disparity (Siegel, Naishadham & Jemal, 2012).

The obesity-related co-morbidities of heart disease, cancer, diabetes, and stroke are among the top 10 causes of death in Native American populations (Barnes, Adams, & Powell-Griner, 2005; Schiller, Lucas, Ward, & Peregoy, 2012). Haring, Skye, Battleson, Brings-Him-Back-Janis, and Teufel-Shone (2014) also discussed co-occurring relationships that occur between oral health disease and obesity in Native populations. Native peoples have a disproportionately higher prevalence of obesity compared to other American groups and are 1.6 times more likely than white adults to be obese (Compher, 2006). A study conducted with the assistance of Native American interviewers using the Behavioural Risk Factor Surveillance System (BRFSS) with 404 Native American adults in northern plains tribal communities discovered a significantly greater prevalence of obesity in Native than in non-Native regional or national samples (Holm, Vogeltanz-Holm, Poltavski, & McDonald, 2010). A study released in 2012, demonstrated significant relationships between body mass index (BMI, a means of measuring weight proportionate to height) and mortality from all causes, cardiovascular disease (CVD) and cancer. The increased risk of all-cause, CVD and cancer mortality associated with an elevated BMI was significant at levels above 30 kg/m<sup>2</sup>; however, overweight individuals also had an approximately 60% higher risk of CVD mortality (Katzmarzyk et al., 2012). There have been numerous studies linking obesity to a variety of cancers such as colorectal (Na & Myung, 2012) and pancreatic (Kim & Han, 2012) cancer. Therefore, the importance of finding preventive measures and new interventions to understand and address obesity and its relationship to cancer is paramount for populations such as Native Americans and other Indigenous communities worldwide who are diagnosed in later stages for obesity-related cancers.

## Workplace Interventions and Employee Assistance Programs

There are an increasing number of obesity-prevention interventions in the Indigenous landscape and other minority communities (Carrel, Meinen, Garry, & Storandt, 2005; DeRenne, Maeda, Chai, Ho, Kaluhiokalani, & Braun, 2008; Harvey-Berino & Rourke, 2003; Teufel et al., 1999). Secondly, there is a growing number of obesity prevention interventions geared towards the workplace environment (Mhurchu, Aston, & Jebb, 2010). This includes workplace health programs that incorporate multiple forms of intervention including environmental and individual level approaches to improve physical activity and promote healthful eating practices (Pratt et al., 2007). There are also a rising number of obesity and cancer prevention programs (Campbell & McTiernan, 2007). In fact, nearly half of U.S. Centers for Disease Control and Prevention-funded national comprehensive cancer control program action reports contained at least one cancer prevention objective or intervention in the workplace setting. Workplace interventions were also noted among action plans and served as one way to reduce risks for obesity-related cancers (Nahmias, Townsend, Neri, & Stewart, 2016). Overall, what is lacking is the combination of workplace interventions that focus on at-risk populations and incorporate the links between obesity and cancer. This research begins to fill the void by creating a culturally attuned intervention module to address these health disparities within the context of a workplace setting.

Historically, Employee Assistance Programs, or EAPs, were initiated in the 1940s and were first concerned with alcohol problems. These EAPs were staffed by non-professionals or recovering counsellors (Cunningham, 1994). Today EAPs provide employees and their families with guidance on various social, mental, emotional, and health care issues in order to support a healthier workforce. Topics include disease management, co-worker conflict, stress, physical health concerns, substance misuse issues, marital distress, trauma, and other problems that may affect the individual, family or community and

negatively impact work practices. EAP services are based on a model that encompasses assessment, short-term problem solving, and referral often led by the field of social work (Haring & Freeland, 2010). EAPs are a unique, and novel forum for innovative intervention and comprehensive disease management applications (Haring, Hudson, Erickson, Taulii, & Freeman, 2014).

## Translating Interventions into Workplace Modules

One intervention from the U.S. that has global translational promise is the *Pathways* intervention. Pathways was the largest Indigenous youth obesity prevention intervention study conducted across a number of U.S. Indigenous schools systems and with an array of tribal affiliations (Teufel et al., 1999; Caballero et al., 2003; Stevens, et al., 2003, Story, Strauss, Zephier, & Broussard, 2003; Cunningham, et al, 2003). The research reviewed the adaptability of components of the Pathways program and how it interplays within an adult population in an organisational context of tribal workplace settings and workplace interventions.

The EAP module development initially went through a content development phase with an array of specialists and professionals in the fields of disease management, health coaching, employee assistance program practice, workplace health, obesity prevention, exercise, and cancer. Suggestions that emerged during the content development stage included the placement of particular topics of discussion. One significant item that was brought forward was the development of a *procedure manual*, or an EAP treatment manual, for practitioners to use. The manual was created with *face-to-face* practice in mind and included an eight-session model comprised of an initial assessment and second assessment period. Hence, the intervention piece of the module is up to six-sessions.

Initial items from the Pathways program reviewed for inclusion were related to obesity-related health issues and risk factors for cancer. These included learning about fruits and vegetables and physical activity *via* traditional movement, situated in goal-setting and social-

learning frameworks. The EAP process concluded with resource and referral information for ongoing care, cancer screening assessment information and post-EAP handouts that included local resources for dietitians, traditional health practitioners, and exercise specialists.

## Research Design

The primary research goal of the project was to design and test at the feasibility and pilot stage an EAP module that initiated a conversation on addressing healthy lifestyles as a strategy to promote cancer prevention in an Indigenous workplace. The study was descriptive in nature and primarily focused on qualitative responses and analysis. Hypothesis testing was not included. Phase I of the study comprised of a design and feasibility process conducted with collaborative teams that included experts in the field of EAP module development related to workplace health intervention, disease management, exercise, and experts in the fields of obesity, cancer, and Native populations. The module was intended for implementation in an EAP office context, face-to-face, with individual employees.

Phase II of the study was the implementation of multiple focus groups to evaluate the designed treatment manual. A series of four focus groups were conducted by a research assistant with experience in moderation and data collection. Strategised intentional sampling was used to work with existing groups. Overall, 29 focus group attendees participated. The purpose of the focus groups was to provide constructive critiques, suggested improvements, and input for the EAP module. After initial coding of the transcripts from four focus groups was completed, the results were presented to a fifth focus group consisting of Native American elders. They used a consensus panel approach for their advisement, review, feedback, and response to the findings. Overall, these focus groups were up to 90 minutes in length. Focus groups were conducted telephonically or in-person. Snacks and refreshments were provided during in-person focus groups. Incentive items included Pendleton Blankets purchased from a Native American community for raffle items. There were also \$5.00 gift cards provided to each focus group member. Focus group questions

included: 1) Was the intervention clear? 2) Does the intervention appear to be consistent with the goals proposed? 3) Does the program provide sufficient information to the employees? 4) Is the intervention easily used and administered?

Phase III served as feasibility and initial pilot testing. The obesity cancer module, once critiqued and assessed through qualitative analysis, was tested for its feasibility and potential for use in a larger Native American workforce sample. A meeting was held by the research team, an external EAP counsellor, and the selected Native American workplace. Recruitment occurred primarily through a workplace newsletter and presentation during a staff meeting. Criteria to participate in Phase III were to self-identify as Native American and be of working age. Four employees were recruited and each employee attended eight sessions, each lasting 60 minutes. Six sessions were on the EAP obesity-cancer module. Two sessions were related to pre- and post-test data collection. A doctoral educated counsellor was trained in the module delivery by the Principal Investigator. A project research assistant conducted all interviews for data collection related to the project. Data collection included: demographics, knowledge/behaviour/attitudes about obesity; cancer knowledge, questions related to the relevancy of the workplace as intervention means for disease management, issues regarding chronic stress and historical trauma related to health, assessment of cost-savings related to a workplace health intervention, and a questionnaire on physical exercise. Post intervention interviews were up to 90 minutes in length. Incentive items included pottery purchased from a Native American vendor and supported the community-based participatory method.

## Analysis: Focus Groups

Grounded theory process was utilised (Charmaz, 2014; Strauss & Corbin, 1998; Glaser, 1978). Qualitative methods using grounded theory have been practiced with Indigenous peoples in previous work (Palacios & Kennedy, 2010; Haring & Freeland, 2010). Grounded theory is useful to analyse the storied experience and perspectives often used in societies that have an oral tradition such as Indigenous peoples. These

data were analysed by three doctoral qualitative analysts; two were female and one was male. Two analysts were from racially diverse backgrounds and all three were trained qualitative researchers. Initial analysis was accomplished by open coding each transcript several times to identify and label substantive codes that revealed participants' reactions and validation of the developed module (Birks & Mills, 2011; Strauss & Corbin, 1998).

*Categories* included as part of this project were concepts that stood for phenomena - that is, a happening, that was significant to respondents. These events represented the EAP process for use with the emerging obesity and cancer module development and were drawn from the responses and stories of focus group members from various community settings and disciplines (Strauss & Corbin, 1998). *Properties* used in this project were characteristics of categories. They provided definition and meaning and served as attributes to the categories. *Dimensions* further explained properties. They defined a range on which the property varied. As coding progressed, relationships became evident between categories and these categories were further linked at the levels of properties and dimensions. Ultimately, the core-category, low-impact physical activity, was defined by categories that revolved around its axis and was detailed by dimensions and properties (Strauss & Corbin, 1998). The four distinct categories discovered in this project were: connecting sessions on obesity and cancer relationships; low-impact physical activity; stress management; and, transition and closure of the EAP process.

## Results

### Connecting Sessions: Obesity and Cancer Relationships (Category)

The goal of this program was to create a workplace intervention module that aimed to improve health outcomes but also to increase awareness about obesity-related cancers. Participants shared that initial program design lacked this message throughout the entire intervention scheme. One person stated, "...the cancer component needs to be strengthened throughout." Another noted:

I suppose cancer is talked about in a couple of the sections, but I feel like since so few people do

associate cancer with obesity and think a lot about other issues with obesity that just keep that at the forefront and bring it up often.

While another shared:

tying of obesity and cancer and just reiterating it in each section so that they'll get it into their heads. You know repetitive, hearing it over and over, seems to um make the idea stick and what you're trying to stress.

These findings of tying obesity and weight management to cancer knowledge and awareness together are representative of healthy weight management and prevention. Healthy weight, in turn, is distinctly related to physical activity and dietary knowledge, and through awareness comes potential behavioural change. With this in mind, the category of obesity and cancer relationship sets a foundation for the core category that emerged, low-impact physical activity.

### Low-Impact Physical Activity (Core-Category)

Low-impact activity can be described as non-exercise, leisure-time and daily-living activities, including grocery shopping, housework, or walking for pleasure (Varma et al., 2014). Walking is a favoured activity in the U.S. as it requires no special skills or equipment and people of all ages can participate (Miles, Kruger, Liao, Carlson, & Fulton, 2011). The notion of activity or exercise that is low-impact was important because it provided an area to which all processes in the developing manual might relate. This included becoming aware of weight and cancer relationships, health disparities in unique communities, stress, mental health, and post-treatment referrals to exercise or physical activity specialists. Corresponding research by Hu et al. (1999) shared that daily walking can improve insulin sensitivity as well as reduce body weight in diabetic patients. In another study by Fisher et al. (2015), a comparison of six weeks of high-intensity interval training versus continuous moderate-intensity training was conducted. It was found that there was a "greater improvement in cardiovascular fitness" with continuous moderate-intensity training compared to high-intensity interval training. Therefore, continuous moderate training including low-impact activity training does benefit the body and allows people

who cannot perform high-intensity training to benefit from continuous moderate exercise.

Hansen et al. (2009) also confirmed this in their study on continuous low-to-moderate intensity exercise, which found low-impact physical activity to be as effective as moderate-to-high intensity exercise in lowering blood HbA1c in individuals with diabetes. It was concluded that there is no difference, that both types of exercise lower blood HbA1c. This was important for developing the workplace module. Findings from our project and research in the field establish that walking and low-impact activities are as effective as a high-intensity activity but more accommodating to a broader range of people and their abilities.

**Pairing for physical exercise (property).** One property that emerged as part of the category was physical activity. This was explained as the use of teamwork to achieve physical activity goals. One participant indicated, “We had to pair up in there and make goals for it and who helps each other.” Participants also shared that “finding activity with another individual or friend or family member was important.” A dimension emerging from the property of physical activity was fruit and vegetable intake. One community member shared “...I wonder throughout [the program] if there is a way to integrate... um... some questions about ‘group’...how are you working with the whole family around fruits and vegetables?”

Exercise, physical activity, and the culture of tradition were also shared. This was supported by previous literature that stated Pathways, a school-based obesity prevention intervention for American Indian children, altered the physical education portion of the program to include American Indian games, as well as integrating Indigenous learning modes (e.g., story-telling) into different aspects of the program (Teufel et al., 1999; Caballero et al., 2003), which allowed for a more culturally appropriate curriculum for that specific population. Doing so allowed the children to relate to the activity and want to participate. One participant shared, “...culturally sensitive activities are absolutely essential for people to have something to relate to, enjoy the activity. If you don’t enjoy the activity, odds are they’re never going to be successful and they’re

not going to want to be active.” Another shared, “...with tradition you think about lacrosse...you think of snow-snake [Iroquois - Native American game] in the winter... that is men geared so you have to think about women and traditional exercise too... like gardening.” This was expanded upon by another community member, who shared, “...gardening... so you know you want a salad... just go back outside and pick a cucumber and tomato.” Incorporating Indigenous tradition, in the best way possible is what will engage participants and make a difference in the long run.

**Walking (property).** A distinct property of low-impact exercises was walking. One person shared:

Walking to me would be a universally accepted traditional means of physical activity. I think we all at one point were walking a lot so that I think should be one of the pillars of physical fitness and it is something that most people can do safe and effectively for the most part.

Another participant shared, “...Plan a walk at a certain time and I think that people realise the importance of how sitting can like affect the overall health in general too.”

A *dimension* found within the property of physical activity was related to assessment of activity. One community member shared that an easy and effective way of measuring walking was to use pedometers or a fitness app to track movement. This was also reflected by one person who shared, “... give participants maybe um resources to track their steps, maybe pedometers or even if they have smart phone they can also do that on there...but encourage them to use it.”

### **Stress Management (Category)**

Stress was an important theme noted by participants. In relationship to workplace stress, Cooper and Cartwright (1997) stated that tertiary prevention of stress through EAPs was important to psychological well-being and served as a conduit for counselling or referral for more in-depth treatment. Focus group members indicated that stress was an important area that needed to be addressed. In the initial version of the program, a session specifically focusing on stress management was not included. The importance of its inclusion was voiced by participants, who stated:

The program should add one more session on stress management,” and I haven’t really done much um to advance this interest in how stress manifests in um native (Indigenous) women in particular professional native(Indigenous) women... just because of conversations I’ve had with other native (Indigenous) women scholars, other native (Indigenous) women professionals, and so I’m really glad to see this and particularly the focus on uterine cancers here. I do think it’s really an under-researched area and pretty much in every conversation I’ve heard there’s an issue with fibroid endometriosis, ovarian cancer, um...uterine cancer, and so I guess my one thought would be is what I was looking for here I think is the focus on food and exercise is great.

Another shared:

I think both food and exercise is in my own personal experience and experience in communities...you may know in your head what the right thing to do is but the way you know... stress kind of plays out and effects both of those areas and certainly if I’m thinking about what the biggest challenge to my own health and wellness is in a workplace context...it would be stress and stress management.

### **Transition and Closure: EAP (Category)**

The transition of EAP programming is distinctly different from traditional outpatient counselling. EAP by nature is a short, broad-brush program, which focuses on assessment, short-term problem solving, education, and referral (Haring & Freeland, 2010). However, this research created a program was unique in that it focused on specific diseases and disease-management techniques as well as overall issues of health disparities within a special population employment setting. A last session was created to focus on therapeutic transition and closure. Participants also suggested that the last session should include incentives for program completion (e.g., farmer’s market gift cards, pedometers, completion certificates, or a cookbook), forward-thinking goal-setting, and post-EAP referrals and resources.

Most participants shared the inclusion of homework was important. One shared:

Homework is a good idea!” Homework (property) provided action items to promote behaviour change but also encouraged family and co-worker participation. Theoretically, this was

important because it provided an opportunity for social learning theory to play a part in behavioural change. Social learning, later known as social cognition theorists, proposed that most learning comes from the activity of modelling or observation learning (Bandura, 1969 as cited in Murry-Thomas, 2000). It also circled back to the idea of *pairing* with others to promote behaviour change. This was exemplified by participants voicing that “homework was a good idea” and, “I like the homework.” One recommendation also included suggested the inclusion of “food journaling.

Lastly, a normal practice in EAP and other workplace health programs is to provide employees or family members who attend worksite programs a final session that provides a next-step referral with ongoing resource information (Cunningham, 1994). This common practice of post-EAP resources referral (property) is helpful in EAP programs because it provides an avenue to employees for ongoing support and, if needed, more intensive care. Participants in the focus groups shared the need for this emerging disease-management program to include more information related to nutritional facts, determining proportion sizes, and the need to connect with either a dietician or nutritionist. This is exemplified by a participant, who shared (*portion size*):

I know a story that I often tell about my uncle who ran the kitchen at the nation’s largest BIA school, He would say that he wouldn’t really try fruits that weren’t familiar to him if he didn’t cut them up. Something as simple as presenting cut fruit increased their fruit intake.

Another shared (nutritional values):

...A person can be eating a lot of fruit and vegetables but if they don’t have an overall understanding of nutrition and what they’re eating, then it may not do a lot to help.

Overall, focus group participants shared the need for inclusion of referral information and helpful resources, post-EAP. Important resources for inclusion included linkage to ongoing support for healthy eating, exercise options, and stress management education. Other resource areas included information on smoking cessation and specific healthy-eating recipes or cookbook information at the conclusion of the program.

## Results: Exit interviews

Employees who completed the EAP module provided process data through qualitative exit interviews. The lead counsellor also provided feedback *via* an exit interview. These combined interviews shared that scheduling was challenging and that the potential need to increase either the number of EAP counsellors on-site (or off) as well as making more times available (i.e., after hours or more days of availability) was important. An employee also shared that the program length was acceptable, “not too long; not too short.” Further employees indicated that delivery on-site was convenient but also appreciated that the counsellor was not on “staff” and provided independent guidance and ensured confidentiality. Interviews overall indicated the acceptability of the program by sharing, “the relationships developed between the counsellor and us were powerful and engaging” and that “information related to Indigenous populations during the intervention was significant (ancestral diet, exercise, etc.)” Lastly, the interviewees shared that they felt that perhaps the intervention delivered to a larger audience (group or community workshops) would be an excellent forum for intervention.

## Discussion

### Aligning to Indigenous Healthy Lifestyle Interventions

EAPs cover a broad range of topics that impact work-life interface, and healthy lifestyle interventions can certainly be a part of EAP programs especially in workforces that have a high population of Indigenous peoples (Hawley & McGarvey, 2015). EAP programs could build on research that focuses on promoting healthy lifestyles among Indigenous populations. Māori are the Indigenous people of New Zealand and share similarities with Native Americans in terms of being a minority population, experiencing colonisation, and having poorer health outcomes. In fact, Māori have lower life-expectancies than Native Americans, and mortality rates from most cancers were slightly higher for Māori than in than Indigenous peoples of the U.S. (Bramley, Hebert, Tuzzio, & Chassin, 2005). Life expectancy among Māori is about nine years less than other New Zealanders; one notable health

disparity that exists is death due to diabetes and its complications (Hefford, Crampton, & Foley, 2005).

During the 2000s, two research projects with Māori communities piloted interventions targeting obesity in the context of diabetes prevention (Simmons & Voyle, 2003; McAuley et al., 2003). The Ngāti and Healthy diabetes prevention intervention was able to achieve significant reductions in the prevalence of pre-diabetes among Māori living in rural communities on the East Coast of the North Island by means of a community-driven intervention focused on reducing weight by increasing exercise and making healthy diet changes (Coppell et al., 2009). This intervention used community-wide health promotion, education and health-monitoring strategies as well as initiatives aimed at adapting local environments (e.g., schools, retailers, and employers) to help people make healthy changes (Tipene-Leach et al., 2013). Modest improvements in diet and exercise were observed across the community with the greatest change in women who engaged most actively with the intervention. While there was a significant reduction in the prevalence of insulin resistance (an important risk factor for diabetes) in the community, there were minor and inconsistent effects on body weight (Coppell et al., 2009).

*Te Wai o Rona* was a similar lifestyle intervention for diabetes prevention carried out in a more urban setting in the Waikato region of New Zealand (Simmons, Rush, & Crook, 2008). The intervention was based around 12 lifestyle goals for diet and exercise that were developed from international research and adapted for Māori communities in a consultative process with local Māori elders and health workers. Group lifestyle change sessions, delivered by Māori community health workers trained in behavioural change, were intended to develop through local communities and improved access to healthy food and physical activity options. A preliminary pilot study indicated that the approach was acceptable and effective; however, a full evaluation was not completed (Blundell, Gibbons, & Lillis, 2010).

Disease incidence and rates of chronic conditions among Indigenous peoples are well described in

the literature, but solutions for preventing chronic conditions, particularly at the level of families, worksites, or community, are lacking. Any chronic disease-prevention strategy must first understand the environments in which chronic disease occurs and, second, understand that chronic disease among Indigenous peoples results from a complex interplay of genetic, physiological, psychological, familial, social, economic, and political factors.

## Future Research

Finding interventions that are effective and efficient in varying workplace cultures is important. It is imperative to the culture of workplace wellness, crucial for societal health, but ultimately significant to organisations and workforces to improve the *bottom-line* related to productivity. The goal of this project was to build and test at the pilot stage a program process that initiates the conversation on addressing healthy lifestyles related to cancer prevention in an Indigenous population in the U.S. A related aim was to reduce absenteeism, address pre-teeism (at work but distracted); (Lennox, Sharar, Schmitz, & Goehner, 2010) and enhance life-satisfaction by promoting healthy lifestyles. Employees that are healthy, take less time off. According to the Centers for Disease Control and Prevention (CDC; 2013), employers that implement workplace health programs have a greater percentage of employees at work every day than workplaces that do not utilize a workplace health programs such as EAPs. Another important factor is the participation of the employee's family. In EAP practice within an Indigenous landscape, it is normal and expected for family members to be involved in the process (Haring, Hudson, et al., 2014). Healthy lifestyle changes go hand in hand with workplace health programs and not only do they affect the employee by reducing sick time, they also reduce time off due to family illness because employees take what is learned from the program and apply it to their home life (CDC, 2013). For example, males who are overweight/obese miss two more work days a year than males who are normal weight, and females who are obese miss 5.2 days of work a year (Finkelstein, Fiebelkorn, & Wang, 2005; CDC, 2013).

Future research includes moving the curriculum from pilot-testing to multi-site investigation, and then dissemination to at-risk workplace populations. By definition, feasibility and pilot studies are investigations developed to build the base for a planned invention study. They are used to assess the potential for successful implementation of a larger main intervention study (Tickle-Degnen, 2013; Bowen et al., 2009; Arain et al., 2010). Areas of focus for feasibility and pilot work include items around acceptability, implementation, adaptation, integration, and practicality (Bowen et al., 2009). These are all important features for next step considerations and should also include collaborative efforts with multiple tribal groups from various parts of the U.S., First Nations in Canada, and Indigenous groups internationally. Future research should include testing in other minority groups who are at greater risk for health disparities related to obesity, cancer, and related co-occurring conditions. Potential worksites may include predominately African American and Hispanic workforces, rural areas, and also immigrant or refugee workforces.

Employee assistance programming, disease management, and work/life add-ons are evolving in the current workplace health arena. Some programs are comprehensive in nature and may consider advocating additional features such as targeted disease management program structures focused on employee health and productivity. On the other hand, other EAPs or workplace health programs are bundled products that may not have the ability to encapsulate a specialised program beyond their ability to provide *free* EAP services (Sharar & Burke, 2009). Additionally, some workforces may maintain services that seek to match bottom line pricing regardless of cultural infusions. Thus, workplace health is at the mercy of those who review the product. Organisations with human resources or purchasing directors who are familiar with health and human services may understand the human nature side of niche services such as EAP. However, if not, the selection committee may be more in line with capturing the first-look, best priced, or free bundled services rather than long-term savings or health benefits at the macro level. These may be additional opportunities for future research including—the review of EAP

purchasing team members, their familiarity with human services work versus business, their perspectives on bottom-line compared to health, outcomes, and projected work productivity, as well as their perspectives and knowledge of emerging products to improve health in disparate workforces or communities.

## Summary

In summary, the importance of this project was to develop an EAP module that focused on providing information to employees in workforces situated in societies where weight-related diseases may be concerns. Over the past decades, occupational activity (physical activity at the workplace) has decreased, as there are fewer people in manual labour compared to those in “service sector and high-technology occupations” today (French, Story, & Jeffery, 2001). Even workers in manual labour today are not using as much energy as those in the field decades ago because of modern technology (French, Story, & Jeffery, 2001). With the continual decrease in workplace physical activity, it is of significance to develop an EAP module to get the information out to help at-risk populations.

Through the use of national and international experts and guidance of focus-group members from various disciplines and community settings, the project designed an intervention manual for EAP programs and other workplace health initiatives. The finalised program created a draft packet that after further testing can be used by health professionals, social workers, psychologist, nurses, EAP professionals, and comprehensive cancer care centres to promote behaviour change as it relates to obesity-related cancers.

An essential feature of intervention research is the use of treatment manuals. The primary function of manuals is to ensure the intervention procedures being studied are adhered to by the counsellors. This helps with replication of outcomes in determining the effectiveness of the intervention. Although important for continuity, counsellor style may deviate by training (Goldfried & Wolfe, 1998). That being said, the use of the manual for EAP practitioners in the project was a guide to the process such that it did

not strictly dictate process but rather informed procedure for broad-based spectrum of EAP, disease management, and workplace health practice. This project contributed to the completion of this manual, confirmed session meaning, and filled the gap where the initial draft was lacking in design and content. The categories, properties, and dimensions noted in the project thus focused on this meaning and lead to an ongoing theoretical process of EAP practice in the science of disease management-focused practice in workplace health. These ideologies combine into new and involving practices of workplace health for future generations of employees, their families, and the communities in which they reside.

Persistent inequalities speak to the relative inability of national initiatives to address inequities and the unique challenges that Indigenous communities face. Modest successes have been achieved in previous prevention interventions that have prioritised community engagement and cultural integration transformational changes to the provision of disease prevention services for tribal communities has not yet occurred. The lack of sustainable health change points to a systemic problem that requires a deeper systems action analysis of implementation pathways that are reflective of community and cultural engagement. Traditionally interventions have been developed outside of the target communities and while biomedical research on specific physiological causal mechanisms and behaviour change research are important, they are often insufficient for developing effective interventions that work in “real world settings” (Frood, Johnston, Matteson, & Finegood, 2013; Hillier-Brown et al., 2014). The challenge is to identify the right intervention for the right population, and to ensure interventions work effectively wherever they are implemented.

In conclusion, Indigenous peoples face some of the worst health disparities. There are high rates of obesity, cancer, and diabetes among Native Americans, Native Hawaiians, Māori, and the Aboriginals of Australia and Canada (Maple-Brown et al., 2013; Hawley & McGarvey, 2015; Haring, Skye et al., 2014). There are no current workplace intervention EAP programs for an Indigenous/ethnically diverse workforce

population that address obesity and cancer directly—this would be the first of its kind, and a much-needed program. An EAP program for workforces where weight-related diseases are prevalent that is applicable to Indigenous populations in different regions can help to address these issues. This program has been developed to be culturally appropriate, applicable, and modifiable to Indigenous populations in different regions around the globe.

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