

Primary Care Provider's Perspectives on Physical Activity Counseling

by

Laura Kathleen Easty

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Abstract

Physical activity counseling in primary care has been a key health sector response to the health risks of physical inactivity. This thesis examined how providers in a clinic group understood physical activity counseling, perceived their experiences in practice, and to what extent their perspectives differed based by discipline. Two focus groups were conducted, one each for physicians and nurses/nurse practitioners, with short surveys at the start. Physical activity was understood as a health issue, and physical activity counseling was generally accepted as a routine part of care. Though it was an accepted practice, providers noted several areas of challenges, including how to apply recommendations to particular patient contexts, how to address barriers patients face, and different challenges between disciplines in incorporating counseling into practice. These results inform how providers are understood to perceive physical activity and counseling for it, and the challenges providers face integrating physical activity counseling in practice.

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Chapter 1

1 Introduction

1.1 Chapter overview

The growing recognition of the health risks of physical inactivity has led to an interest in how the health sector can promote patient engagement in physical activity. One of the principle approaches has been the adoption of physical activity counseling into primary care practice. The inclusion of counseling on behaviours in clinical visits represents an expansion in the scope of primary care from the recognition and management of illness, to the identification of behaviours conceptualized as health risks and the facilitation of patient behaviour change. As behaviours like physical activity are complex, and influenced by a range of factors in patients' lives, physical activity counseling requires providers to not only view their clinical responsibilities as including behaviour change counseling, but also to define how and to what extent they see their role in engaging with these other factors that shape patient behaviours. Despite the interest in the literature in how to effectively promote healthy behaviours like physical activity in health care settings, comparatively little work has examined how primary care providers understand physical activity, the challenges they may face, and how they define their roles. Here I examined a group of primary care providers' perspectives on physical activity counseling, with a particular focus on how providers understood physical activity and counseling for it, how they discussed their experiences with physical activity counseling and the role of social barriers to patient physical activity they perceived, and how those perspectives might have differed based on provider discipline.

For the following chapters of this introduction I reviewed the evidence underlying the inclusion of physical activity counseling in primary care, as well as some of the related literature that helped provide a context for how providers might understand physical activity counseling, and define their roles. In particular, elements from different theoretical areas including medicalization, public health, and the development of interprofessional scope of practice boundaries were included because they broadened my understanding of the discourse that might inform provider perspectives, as well as what the inclusion of physical activity counseling in primary care might represent for providers.

The aim of this literature was to provide a context for my analysis and discussion of how primary care providers in this study understood physical activity and counseling for it, how they perceived their experiences with physical activity counseling in practice and the challenges they faced, and how provider disciplines defined who was, and should be, responsible for physical activity counseling in practice.

First, the consistent evidence linking physical activity to health outcomes, and the more heterogeneous evidence underlying the health sector response of physical activity counseling in primary care was reviewed.

Next, I reviewed how physical activity is described within the medical literature as a phenomenon understood by its connection to health, with participation informed by the advice of health professionals. This provides a context for how the discourse around physical activity within the medical literature could inform providers' understanding of physical activity and physical activity counseling. Additionally, the focus on medical advice as a tool to promote physical activity is consistent with a broader shift in primary care to include the management of behaviours as health issues.

Recognition of the way physical activity is presented as a health issue is important, as it draws attention to the relative omission of all of the other potential influences on patient health behaviours outside of the clinical context. I next included a review of the relationship between social factors and health and health behaviours to further explore the complexity of physical activity as a behaviour, and to provide context for what that means for providers' ability to facilitate patient behaviour change through an individual patient clinical encounter. Given that physical activity is influenced by so many aspects of patient's lives, the study of physical activity counseling in primary care afforded me the opportunity to consider how providers understand, and the extent to which they engage with, the broader social factors influencing their patients' physical activity.

Finally, I reviewed what is already known from studies of physical activity counseling from providers' perspectives, as well as how social determinants might impact clinical care and how providers might engage with social barriers in practice. I also included a review of the different provider disciplines involved in physical activity counseling and some of the interprofessional

literature that suggests that different providers might experience physical activity counseling differently.

1.2 Physical activity and primary care

Section summary:

Physical inactivity has been consistently associated with poor health, and mortality. The principle health sector response to these health concerns has been physical activity counseling in primary care, though there is no clear consensus on what that counseling entails. Though physical activity counseling dovetails well with other primary care practices, evidence that physical activity counseling is effective in promoting physical activity change in patients remains mixed, though there have been some encouraging recent reviews. However, despite the lack of clarity on its effectiveness, physical activity counseling remains a recommended practice for primary care providers. In this study of primary care providers' perspectives on physical activity counseling, I have the opportunity to examine how providers understand and experience this component of their practice.

1.2.1 Physical activity and health

Rates of physical activity in Canada are low, with just 8.2% of children, and 17.6% of adults meeting the Canadian Physical Activity guideline recommendations in 2015 (Statistics Canada, n.d.). This represents a significant health issue, as physical activity, or lack thereof, has been consistently shown to have implications for health outcomes. Physical activity has been argued to have a protective effect for a range of illnesses, reducing the risk of coronary heart disease, stroke, diabetes, hypertension, some types of cancer, depression, osteoporosis, and obesity (Heath et al., 2012; Jacobson, Strohecker, Compton, Katz, & Barry, 2005; World Health Organization, 2010). Conversely, being physically inactive increases the risk of poor health, and has been found to account for 6% of coronary heart disease, 7% of type 2 diabetes, 10% of breast cancer and 10% of colon cancer burden globally (Lee et al., 2012)¹. The contribution of physical

¹ The contribution of physical inactivity to ill health may in fact be higher than was found in this study, as the World Health Organization has cited physical inactivity as the principle cause for 21-25% of breast and colon cancer, 27% of diabetes, and 30% of ischaemic heart disease (World Health Organization, 2010)

inactivity to poor health outcomes is significant; after controlling for other health, social and behavioural determinants such as age, income, rural residence, alcohol, and cigarette use, physical inactivity has been identified as the factor most strongly associated with obesity (PHAC & CIHI, 2011). Physical inactivity is the fourth leading factor associated with global mortality, after high blood pressure, tobacco, and high blood glucose (World Health Organization, 2010). To illustrate what that represents, one study found that physical inactivity was responsible for 9% of deaths worldwide (>5.3 million in 2008), and that a reduction in physical inactivity of just 10% would have the potential to avert more than 500,000 deaths annually (Lee et al., 2012)². The concern over the health implications of physical inactivity has led to interest in how the health sector can promote physical activity, particularly in primary care.

1.2.2 What is physical activity counseling?

Physical activity counseling has been the principle primary care response to the concern over physical inactivity and poor health. Though referenced often in the literature, there is a lack of consensus on what physical activity counseling actually entails. Several articles provide no strict definition of counseling (Aittasalo, 2008a; AuYoung et al., 2016), and when included, definitions can be vague, such as counseling “which typically takes the form of advice and discussion to encourage patients to increase and maintain [physical activity]” (Hébert, Caughy, & Shuval, 2012). In contrast to the vagueness of the definition, the recommendations for physical activity are highly prescriptive, and generally reference specific targets of a given degree of rigorousness of activity, performed over discrete sessions to attain a particular recommendation of minutes per week (see Table 1).

There is also confusion over the “counseling” process, as providers might utilize different approaches to the content or structure of the advice itself, with several models suggested in the literature, including the 5As approach (Jennifer K Carroll, Antognoli, & Flocke, 2011) or the PACE model (Bolognesi, Nigg, Massarini, & Lippke, 2006; Norris, Grothaus, Buchner, & Pratt, 2000; Van Sluijs et al., 2005). Providers may or may not include written materials or exercise prescriptions as components to their counseling (Aittasalo, 2008a; Gao et al., 2016; Goldstein et

² It should be noted that a subsequent study suggested this number may have been an overestimation due to methodological factors, and that in 2010 a more accurate estimation would be 3.2 million deaths (Lim et al., 2012)

al., 1999; Van Sluijs et al., 2005; Vuori, Lavie, & Blair, 2013). Additionally, advice can be specific to the individual patient – there are overall recommendations (Canadian Society for Exercise Physiology, 2012), but also a range of illness-specific physical activity guidelines that could inform the particular recommendations providers may give (Leung et al., 2017; Moe et al., 2014; Papaioannou et al., 2010; Sigal et al., 2013). Further, there is no consensus on what is the best approach among the interventions studied for physical activity promotion in primary care. Studied interventions included a range of follow-up visits (Goldstein et al., 1999; Grandes, 2009; The Writing Group for the Activity Counseling Trial Research Group, 2001), took place in a clinical setting or over the phone (Bolognesi et al., 2006; Norris et al., 2000; The Writing Group for the Activity Counseling Trial Research Group, 2001), and involved primary care providers or other allied health members (The Writing Group for the Activity Counseling Trial Research Group, 2001; Van Sluijs et al., 2005; Vuori et al., 2013).

For the purposes of this study, I am defining physical activity counseling as a practice involving the discussion of physical activity, or “any bodily movement produced by skeletal muscles that require energy expenditure” (World Health Organization, 2018), undertaken by a primary care provider during a clinical visit, with the aim of promoting an individual patient’s physical activity participation.

1.2.3 The evidence for physical activity counseling in primary care

There are several characteristics of primary care practice that suggest it may be the ideal forum through which the health system can take action on physical inactivity. As a community-based specialty, primary care has the capacity to access a large population, including those who may be physically inactive or harder to reach (Aittasalo, 2008b; AuYoung et al., 2016; Rubio-Valera et al., 2014; Vuori et al., 2013). Further, primary care involves the ongoing continuity of care for patients, enabling providers to be more informed of patients’ social circumstances and health behaviours (Mayes & Armistead, 2013; Rubio-Valera et al., 2014). Finally, as a point of access to the health system, primary care is well-positioned to connect patients to other services, or specialists through referrals, when health concerns are raised (AuYoung et al., 2016; Mayes & Armistead, 2013; Rubio-Valera et al., 2014). Physical activity counseling also fits well into pre-existing roles of primary care providers, including other lifestyle counseling practices such as for

smoking cessation, diet and alcohol consumption (Kardakis, Weinehall, Jerdén, Nyström, & Johansson, 2013). Finally, patients generally report a high level of trust in their physicians (Hall, Dugan, Zheng, & Mishra, 2001), suggesting advice from a primary care physicians might hold weight in influencing patient's perceptions of their physical activity participation. For physical activity specifically, it has been suggested that patients consider their family physician their most trusted source of physical activity information (Schofield, Croteau, & McLean, 2005). Further, one study examining the influence of trust on lifestyle behaviours in high blood pressure did note that those with complete trust in their physician had higher odds of reporting engaging in regular exercise, though that finding was not statistically significant (Jones, Carson, Bleich, & Cooper, 2012).

Despite the fact that physical activity counseling would seem to fit well in primary care practice, evidence that the promotion of physical activity in interventions within primary care is effective in facilitating patient behaviour change is less consistent. Several trials to examine the efficacy of various primary care interventions have had mixed results (see Table 2 for a select summary of prior studies, and the search criteria used to identify them). Integration of these results to generate a recommendation for an approach to improve physical activity in the primary care context is complicated by the range of study interventions, inconsistent results and variable outcome measures. Several reviews have attempted to summarize the evidence into a coherent message to inform practice. An early review of the evidence from randomized trials as well as case-control and observational studies, designed to inform the US Preventive Services Task Force, reported mixed results, with concern for possible trial limitations raised (Eden, Orleans, Mulrow, Pender, & Teutsch, 2002). A more recent literature review and meta-analysis was more positive, suggesting brief activity counseling was an efficient and effective means by which to promote physical activity (Vuori et al., 2013). Similarly, meta-analyses have suggested small but significant effects. A systematic review and meta-analysis of randomized control trials of primary care interventions for physical activity found small to medium effects of interventions at one year of follow-up (Orrow, Kinmonth, Sanderson, & Sutton, 2012). Finally, a recent review of reviews, which incorporated evidence from existing meta-analyses and systematic reviews from 2002 to 2012 also found that overall, interventions have been found to have small to moderate effects, and that interventions which included multiple behaviour change techniques, and which target insufficiently active patients, achieved the best results (Sanchez, Bully,

Martinez, & Grandes, 2015). Though these results are encouraging, effects are generally small and the large heterogeneity in terms of type of intervention, intensity of investment of time and resources, length of follow up and outcome measures in the studies on which these results are based limits the extent to which results can be considered together to inform policy and practice.

Though findings are mixed, there remains an expectation that physical activity counseling be provided in primary care. As well as being included in a range of guidelines (see Table 1), the Canadian College of Family Physicians put out a joint position statement with the Canadian Nurses Association on the importance of physical activity to health (CCFP & CNA, 2011), and a Pan-Canadian Physical Activity Strategy included among its interventions the inclusion of physical activity counseling as a reimbursable physician expense (Coalition for Active Living, 2010). In the United States, the American College of Preventative Medicine concluded that given the growing burden of poor health related to physical inactivity, and the potential for some interventions to show improvements, physical activity counseling should still be recommended in the primary care setting (Jacobson et al., 2005). Similarly it has been noted that the respective American academies and colleges of Family Physicians, Pediatricians, Obstetricians and Gynecologists, and Sports Medicine providers, as well as the American Heart Association have also addressed physical activity counseling in the primary care setting (Jacobson et al., 2005). In terms of incentives, the Affordable Care Act in the United States included additions for benefits for alcohol screening and counseling, depression screening, obesity screening and counseling and smoking cessation counseling (Crowley & Kirschner, 2015). In order to better understand how providers have adapted to this practice, it is important to examine what the integration of physical activity into medical practice represents, and the implications it may have for primary care providers' practices.

1.3 Physical activity as a medical issue

Section summary:

Within the medical literature physical activity is understood by its association with health outcomes, with the focus of studies of physical activity counseling largely on its efficacy to promote physical activity with the aim of improving health (Aittasalo, 2008b; Eden et al., 2002;

Vuori et al., 2013). The presentation of physical activity as a purely medical issue, defined in terms of its health implications, with responses (such as physical activity counseling), framed as treatment modalities, provides a context for understanding the history and discourse that could inform provider perspectives. Additionally, consideration of the inclusion of physical activity as a medical issue to be managed in primary care practice has implications for how providers might experience physical activity counseling.

Firstly, Physical activity counseling is one example of a general trend to include the management of health behaviours under the purview of primary care. Secondly, the medical language of physical activity counseling focusses on the potential influence of medical advice more than on the broader social factors in patients' lives that shape their physical activity participation. Providers have a recommended practice – physical activity counseling – presented in the context of advice based on health implications, without clear guidance on how (or whether) to address the other determinants of physical activity participation in patient's lives. Studying the medical management of health behaviours, like physical activity, therefore provides an opportunity to consider how primary care providers approach these social determinants of health behaviours, and the role they see for themselves in engaging with barriers to physical activity patients may face outside the clinical context.

1.3.1 Physical activity as a medical issue

In the context of physical activity counseling, a behaviour (physical activity) is discussed in terms of how it relates to health outcomes, recommendations are defined according to strict prescriptive guidelines that are directly linked to illness prevention, and the solution for physical inactivity (physical activity counseling) is presented as a treatment approach. These characteristics of the discourse around physical activity are important to recognize as they directly relate to the definition of a “medicalized” concept as defined by Conrad (1992). Conrad considered medicalization to consist “of defining a problem in medical terms, using medical language to describe a problem, adopting a medical framework to understand a problem, or using a medical intervention to “treat” it” (1992). These criteria can be applied to physical activity in the context of primary care counseling as physical activity is defined by its relationship to health,

recommendations are understood based on their health impact, and interventions are framed as treatments.

It is important to note that though physical activity (and counseling for it) appears to meet the criteria of medicalization according to Conrad (1992), it is less clear it would meet the requirements of medicalization as defined by Sadler (Sadler, Jotterand, Lee, & Inrig, 2009). Physical activity is discussed as a medical issue, but the specific timing of medical appropriation of physical activity is less clear in a historical context (Sadler et al., 2009).

Additionally, though Conrad has argued that medicalization encompasses all problems defined in medical terms, it is most often referenced as a negative process (Conrad, 1992)³. In this thesis when I discuss physical activity as a medical issue, or use the term ‘medicalization’, I do not imply any judgement on whether that framing is positive or negative, or whether it is the way by which physical activity *should* be understood. Instead, my aim in including this literature is to provide a context for the broader discourse in medicine which could inform how providers understand physical activity counseling.

To consider physical activity as a behaviour that has been medicalized implies that there has been a process over time by which a previously unrelated concept has been appropriated into the medical sphere. Some authors have argued that health behaviours such as physical activity have only recently become identified as part of medical practice (Armstrong, 2009). However, teasing apart whether physical activity was incorporated into medicine at some specific point is challenging, as behavioural advice has been offered by health professionals in different ways throughout history (Macauley, 1994; Vallgård, 2010). Further, defining norms in medical practice can be difficult, as it has been noted that it was rare for there to be a single agreed on view on the relationship between, for example, exercise and heart health (Heggie, 2010). Despite these limitations, there are some indications that even if advice on physical activity was previously noted in medical practice, the focus on physical activity as a medical treatment, to be prescribed and managed by health professionals, has been growing over time.

³ This is not the only stance taken, as some authors have argued that medicalization of physical activity could be a positive process that promotes awareness and access to treatments (Joyner, 2012).

During the 19th century, the prevailing focus medically was on exercise as a threat to health, including to heart health (Armstrong, 2009; Heggie, 2010). During the turn of the century, there was a shift away from the perception of exercise as harmful, to the belief that it offered potential therapeutic benefit, with a focus on how to best to tailor activity recommendations for both athletes and the general population (Armstrong, 2009; Heggie, 2010). This trend to view physical activity as something to be done under the direction of health professionals, has been furthered by direct discussions in the literature of whether physical inactivity should be considered a medicalized issue (Joyner, 2012), or even a disease (Lees & Booth, 2005)⁴. Therefore, while it is hard to define a time when physical activity was specifically appropriated by medicine, over the last century there has been increasing discussion of physical inactivity as a health risk, and of physical activity counseling as a treatment modality, guided by the recommendations of health professionals. This focus on medical guidance for physical activity is important as physical activity is only one of several complex health behaviours being integrated into primary care practice. As these behaviours are shaped by a range of factors in patients' lives, studying provider perspectives on physical activity counseling affords an opportunity to consider how providers understand and define their role in addressing these broader determinants of physical activity participation.

1.3.2 Medical management of behaviours

Physical activity is not the only “health behaviour” (Spring, Moller, & Coons, 2012), to fall under the purview of primary care in the last several decades. Other health behaviours including poor diet, smoking, substance use, and risky sexual behaviours have increasingly been viewed as

⁴ Debate regarding physical inactivity as a possible disease is not isolated, but can also be understood by looking at the debate regarding obesity as a disease. Obesity has been argued to be a medical concern (Kopelman, 2000), though others have suggested there are global examples where perceptions of weight and obesity remain more culturally constructed (Batnitzky, 2011). It has been noted that as with physical activity, the way obesity has been framed and understood within medicine has shifted with time (Chang & Christakis, 2002). Also similar to physical activity counseling, there has been much discussion about the extent to which medicalization has contributed to the validation of the medical profession as the source of treatment for obesity, in particular with bariatric surgery (Ortiz et al., 2017; Salant & Santry, 2006). The similarities between the medicalization of obesity and physical activity are important to note, as the publication cited here that argued physical inactivity is a disease, did so using the discussions around obesity as a disease as a framework (Lees & Booth, 2005).

issues for which medicine must formulate a response (Spring et al., 2012). What is unique about this trend, is that despite some discussion of whether physical inactivity satisfies the definitions of a disease (Lees & Booth, 2005), historically these behaviours have not been recognized as medical diseases but are seen as health issues more because of their associated risks of disease. This has resulted in a shift in the focus of health care to address not only diseases, but the behaviours that account for the increased risk of those diseases.

This shift is not unique to primary care and has roots that have been more deeply explored in public health. Generally, there has been a transition over time from a public health system that focusses on population-based interventions, such as potable water and infection control, to the mitigation of individual risk factors, including health behaviours (Middleton, 2011; Schlaff, 2013)⁵. This has occurred internationally, for example in the United States the early 20th century saw a transition from the containment of infectious disease to the prevention and screening of the individual (Schlaff, 2013). Recently, the government of the United Kingdom published “Healthy Lives, Healthy People”, which outlined a new public health approach that included a focus on smoking, obesity, mental and sexual health as well as changing adult behaviours (Her Majesty’s Government, 2010).

In Canada, it has been argued that the health promotion approach has varied in the last several decades in response to the economic and political context (Jackson & Riley, 2007). In the 1980s, there was a growing interest in health promotion for a range of issues from smoking to driving safety (Jackson & Riley, 2007). However, decreases in funding due to economic strains in the 1990s somewhat limited the development of health promotion, though there was a renewed focus on lifestyle programs and the individualization of responsibility (Jackson & Riley, 2007). These trends in health promotion are important to note, as they directly relate to primary care. Indeed, part of the resurgent interest in health promotion in Canada in the early 2000s has occurred within the framework of primary care reform (Jackson & Riley, 2007). This is not unique to Canada, as discussions around public health in the UK also note a need for preventative services to compliment clinical care, such as with smoking cessation (Middleton, 2011).

⁵ Though this is a useful summary, it has been suggested that transitions within public health have actually been quite complex, with health promotion including adaptation of components from previous paradigms (Awofeso, 2004).

Primary care has therefore been a particular vehicle through which the broader public health focus on the promotion of healthy lifestyle behaviours has been integrated within medical practice. This is not surprising, since as early as the Alma-Ata Declaration responsibility for health promotion has been argued to be under the purview of primary care (WHO International Conference on Primary Health Care, 1978). The fact that, as with physical activity, many of these health factors are *behaviours*, has important implications for the scope and practice of primary care. These “lifestyle” behaviours (Armstrong, 2009), are not only shaped by medical advice, but by patients’ broader psychosocial context. This implies that that in order to promote a change in patients’ behaviours, providers need to have an understanding of the broader context of patient’s lives and the factors that help shape their behaviours. However, providers have limited guidance on how to navigate the broader determinants of complex behaviours, as the primary intervention supported in the medical literature - physical activity counseling - focusses more on provider medical advice as the facilitator of patient behaviour change. For this study of provider perspectives on physical activity counseling, this suggests an opportunity to consider not only how providers understand physical activity and counseling for it in relation to the medical and sociological literature, but also how providers describe physical activity counseling in the context of this broader discussion regarding the medicalization of health behaviours, and in particular how providers perceive the social determinants to physical activity and how they engage with them.

1.3.3 The social determinants of physical activity

Lacking in the physical activity counseling literature is a recognition of the broader influences on patient physical activity engagement outside of health provider counseling. Physical activity is understood to be a complex phenomenon, shaped by a range of factors in patients’ lives such as culture, and gender. There is also a growing body of work which has considered how health determinants such as income, education, and the physical and social environment, are associated with health and health behaviours (e.g. PHAC, 1999 and below). Guidelines for physical activity counseling focus more on the recommendations providers should be giving as a means for promoting physical activity (Canadian Society for Exercise Physiology, 2012; Papaioannou et al., 2010; Sigal et al., 2013), and so providers do not have clear recommendations for how to address the complexity of factors influencing their patients’ physical activity. It is also not clear

how providers themselves understand their role in incorporating these broader determinants into their medical management of health behaviours. This study has an opportunity to consider how primary care providers perceive their role in addressing the potential barriers to physical activity their patients may face due to these determinants.

Physical activity is a social phenomenon which can include dance, gardening and other ritualized activities, and the foundation of English sport was seen as moralizing, offering discipline, and relevant for both body and soul (Macauley, 1994). Sport as a form of physical activity is shaped by culture, and it has been noted that participation in sport can be a result of socialization, that can differ by gender (Fasting, 1987). The relationship between sports and culture is not unidirectional, as it has also been argued that sports culture, with the trend towards mass participation and spectatorship, may in turn have affected how people respond to other aspects of their social environment including urbanization and work culture (Spring & Joel, 1974). Additionally, the influence of social factors on physical activity is not exclusive to sport. Dance is also ritualized and linked to culture – for example dance has been seen to be used as a form of resistance, and to influence views of gendered social norms (Maples, 2012). Trends in types of physical activity are also not static or consistent. For example, during the time when there was renewed medical interest in the health benefits of activity in the early 20th century (see above), organizational sports increased dramatically in a comparatively short period of time in 1900-1920 (Fischer, 1994), and interest in sports has been preserved since. In contrast, dance halls, which were initially popular in the early 20th century, went on to generally decrease in prevalence by the 1930s (Fischer, 1994).

Beyond culture, the association of other social factors with health and health behaviours is well established. Previous work has found that determinants like income, the physical environment, education, employment and gender, among others, are related to health outcomes (Canadian Medical Association, 2013a; PHAC, 1999; Raphael, 2006; Wilkinson & Marmot, 2003). Similarly, health risks, or behaviours, have also been seen to vary by social factors. For example, those of lower socioeconomic status have higher rates of smoking, overweight and elevated cholesterol, as well as decreased physical activity (Choiniere, Lafontaine, & Edwards, 2000). Not only are social determinants like socioeconomic status related to physical activity, but the effect they have is significant, with one study finding income and education accounted for 40%

of the increased odds of physical inactivity among persons with lower education (Droomers, Schrijvers, Van De Mheen, & Mackenbach, 1998).

Some work has examined why socioeconomic factors may relate to physical activity participation, with many possible explanations identified. Those of lower socioeconomic status are more likely to cite poor health as a barrier to exercise (Burton, Turrell, & Oldenburg, 2003; Chinn, White, Harland, Drinkwater, & Raybould, 1999). Additionally, lack of access is one of the most consistently cited barriers to exercise reported in studies of lower socioeconomic groups (Burton et al., 2003; Chinn et al., 1999; Kamphuis, van Lenthe, Giskes, Brug, & Mackenbach, 2007; Schrop et al., 2006). Finally, concerns for safety and perceptions of neighbourhood aesthetics have also been suggested to be barriers to exercise particularly relevant to those of lower socioeconomic status (Kamphuis et al., 2007; Wilson, Kirtland, Ainsworth, & Addy, 2004). Further, these inequities in physical activity participation may be increasing – in the UK it was found that increases in physical activity over time were more pronounced for men who were higher income, white ethnicity and from non-manual social classes, potentially increasing the activity gap (Stamatakis & Chaudhury, 2008). In fact, the disparities between populations in physical activity are so pronounced it has even been suggested as one possible intermediary mechanism through which social determinants could lead to poor health outcomes (Burton et al., 2003; Kamphuis et al., 2007)⁶.

Despite the evidence of the association between social determinants and health behaviours, there is a tension in the literature between the role of broader social forces in shaping health behaviours, and the extent to which patients have control over their engagement in these behaviours. In the case of obesity, there has been a trend to move away from discussions of individual responsibility, and instead to consider obesity as a disease, shaped by biological and environmental factors that may be outside any individual's control (Chang & Christakis, 2002; Ortiz, Kawachi, & Boyce, 2017; Salant & Santry, 2006). This has also been seen in substance use, such as with the trend towards viewing smoking as a disease of addiction, not a choice (Kmietowicz, 2000). What is striking about this is that the health care interventions to address

⁶ Though this argument demonstrates the importance afforded to physical activity as a predictor of health in the literature, it should be noted that it has also been suggested that socioeconomic disparities in health behaviours may explain only a modest amount of socioeconomic disparities in health (Lantz et al., 2001), which is a significant critique of the theory that differences in health behaviours explain differences in health

these concerns, like physical activity counseling, focus on a provider's ability to change specific health behaviours at an individual patient level in a medical setting. This counseling approach is also challenged by literature which notes that education alone does not result in patient behaviour change (Pine & Fletcher, 2014). Further, the risk this poses of minimizing efforts to address the broader social forces that shape health behaviours, or whether medical and social interventions could work synergistically is a matter of much debate, and beyond the scope of this study (Bedi, Martinez, Levin, Comer, & Haney, 2017; Hart, 2017). The focus in this study of primary care providers' views on physical activity counseling is how that tension plays out for individual health care providers attempting to change patients' health behaviours.

It is not clear how providers are navigating the expectation that they counsel individual patients on a range of health behaviours, which are recognized to be also related to patient's environmental and social context. How much do providers perceive the influence of social factors on patient behaviours, and what is their role, if at all, in addressing barriers to healthy behaviours that patients may experience outside the clinical setting?

1.4 How have providers adapted to physical activity counseling in primary care?

Section summary:

Primary care providers are having to adapt their practice to include counseling on a range of health behaviours, in the context of increasing recognition of the role that social factors play in shaping health. Studies of provider perspectives on physical activity counseling have focussed more on rates of counseling, and on barriers to counseling practices, than on how providers understand counseling and their experiences in practice. There has also been limited work considering how primary care providers engage with the social determinants of health in clinical settings. Studies have considered how social determinants impact care delivery, and the effectiveness of interventions to promote physical activity within higher needs communities, more than how providers perceive their roles in incorporating these determinants into their practices. This study affords me the opportunity to consider not only providers' perspectives on physical activity counseling in practice, but also how they navigate the social determinants that

affect their patients' physical activity participation. There is also some evidence that different provider disciplines engage with the literature and incorporate new practices differently, so by including different disciplines in this study I can also consider the extent to which perspectives differ by discipline.

1.4.1 What do we know about provider perspectives?

Primary care providers are having to adapt their practice to include counseling on a range of health behaviours, in the context of increasing recognition of the role that social factors play in shaping health. There have been calls to action from medical organizations such as the BMA and CMA, encouraging physicians to take action on these social factors, not only by assisting individual patients in clinic (with specific suggestions of how to do this) (Canadian Medical Association, 2013b), but also by connecting with broader community initiatives, and advocating for changes in policy areas outside of the traditional health system (BMA, 2011). Additionally, the incorporation of broader social and environmental factors into the medical approach of health promotion may be particularly relevant to primary care in Canada, as several of the seminal reports considering health promotion and broader contributors to health, such as the Ottawa Charter, and the Lalonde report, were published here (Lalonde, 1981; World Health Organization, 1986). However, how physicians navigate counseling, and how far they feel they should be engaging with the external factors influencing health behaviours in their practices is less well understood.

Physical activity promotion has become a recommended component of primary care practice, included in a range of guidelines (for a select list of the Canadian guidelines relevant to primary care that include physical activity please see Table 1), and in the Canadian context it has been seen to be a regular component of primary care (Petrella, 2007), while there remains considerable discussion regarding the most effective way by which it should be implemented. However, studies of provider perspectives tend to focus more on their rates of counseling, and the barriers and facilitators to incorporating counselling into practice that they report, rather than on how they understand physical activity counseling, their experiences with counseling in practice, and how they have defined their roles.

Considerable work has examined how often providers counsel, and rates of physical activity counseling by primary care providers have often been described as sub-optimal, though there is a huge range in results reported (Aittasalo, 2008a; Bock, Diehm, & Schneider, 2012; Florindo et al., 2013; Petrella, 2007) from as low as 16-20% (Aittasalo, 2008a), to as high as 69.8% (Petrella, 2007).

In order to understand primary care provider participation in physical activity counseling it is important to go beyond whether providers do it, to examine how they view physical activity counseling, and how they have incorporated it in practice. A further body of work studying providers' experiences of physical activity counseling has looked at barriers to provider-based physical activity advice in practice, in particular lack of knowledge, training, time, skills, reimbursement, as well as lack of comfort giving detailed advice, or confidence in the effectiveness of counseling (Aittasalo, 2008b; AuYoung et al., 2016; Bock et al., 2012; Douglas, Torrance, van Teijlingen, Meloni, & Kerr, 2006; Hébert et al., 2012; Peterson, 2007; Vuori et al., 2013). There has even been one systematic review examining primary care providers' views on physical activity which found that overall providers believe it is important and part of their role, though they are unsure about its efficacy, and the details of their advice, and they struggle with a range of barriers (Hébert et al., 2012). The identification of barriers and motivators to engaging in counseling is useful to promote the incorporation of counseling into primary care practice, but it provides less information on providers' perspectives on their experiences when they are actually engaging in physical activity counseling and the challenges they face.

The fact that physical activity counseling is recommended, and generally positively viewed, yet rates of counseling are still reported to be sub-optimal, suggests the importance of factors other than knowledge as motivators for practice change, and some work has noted the role of provider attitudes in practice adoption. Some studies have examined how providers view physical activity and health promotion, which has found that generally providers have positive attitudes towards these practices, and see them as part of primary care (Bock et al., 2012; Douglas et al., 2006; Hébert et al., 2012). Despite these positive perceptions of physical activity counseling, there is a suggestion in the literature that the actual integration of physical activity counseling into practice might remain challenging. For example, even when health promotion is an accepted component of providers' practice, providers may still struggle with integrating new skills into their

counseling. One study found primary care providers were more limited in the use of physical activity prescriptions in their practice, as there was not a tradition of prescribing activity, or referring for it, even when they agreed that talking about physical activity was part of their role (Persson, Brorsson, Ekvall Hansson, Troein, & Strandberg, 2013a). Additionally, one cited barrier to counseling is provider's perception that their counseling has not been successful in motivating patient behaviour change (Bock et al., 2012; Hébert et al., 2012; McPhail & Schippers, 2012). This barrier is important, as to engage with a new practice providers have to feel they have the skills, competence, or self-efficacy, to actually do it, and they must believe that when done correctly that practice has the capacity to be effective (Yoast, Wilford, & Hayashi, 2008). This may be particularly challenging for providers when it comes to physical activity counseling, as there seems to be no clear consensus on what physical activity counseling in a primary care setting entails (see above). Given the confusion in approaches and what that might mean for adoption, here we have an opportunity to consider how primary care providers discuss their approach to physical activity counseling, the extent to which they view it as fully integrated into their routine care, and any challenges they perceive.

1.4.2 How have providers incorporated social determinants into practice?

In addition to how providers understand and approach physical activity counseling, there has been limited work looking at how providers engage with the social determinants of patient health behaviours in a clinical setting. Previous work has examined how social factors might impact clinical encounters, by limiting time, contributing to greater health burdens that require more issues to be addressed per visit, and by presenting challenges in terms of the management of complex health problems that may not be fully captured in existing guidelines for practice (Bolen, Sage, Perzynski, & Stange, 2016; Fortin, Lapointe, Hudon, & Vanasse, 2005; Mercer & Watt, 2007). This, coupled with potential communication barriers, due to language, culture and health literacy, may make physical activity counseling more difficult, and increase rates of physician stress and burnout (Fiscella & Epstein, 2008; Mercer & Watt, 2007). Despite these challenges physical activity counseling remains a common practice in primary care for disadvantaged communities, with one study on the use of a physical activity counseling tool in an underserved population finding that physical activity was discussed in 41% of visits (J. K. Carroll et al., 2008).

Though this contributes to our understanding of how social determinants impact care delivery, how providers incorporate social factors into the practice of physical activity counseling is less clear. Work in this area has focussed on whether interventions in a range of populations are effective, and for physical activity counseling studies in more disadvantaged populations have found that interventions did have the capacity to effect change in patient physical activity levels, particularly in the short term (Hardcastle, Blake, & Hagger, 2012; Lowther, Mutrie, & Scott, 2002). Aside from studies of efficacy, limited work has examined providers' experiences addressing patients' social contexts when giving counseling in more underserved communities. It is important to understand how providers incorporate physical activity counseling into practice with their most vulnerable patients as data suggest the greatest benefit from increases in physical activity are from small changes in those patients that are most sedentary (Warburton, Charlesworth, Ivey, Nettlefold, & Bredin, 2010). Further it has been noted that those of higher socioeconomic status often benefit first from new interventions (Douglas Manuel, Creatore, Rosella, & Henry, 2009). This puts providers in a challenging position where they have to navigate a balance between addressing patient priorities, which tend to be acute issues (Arvidsson, André, Borgquist, Andersson, & Carlsson, 2012), and ensuring equitable access to prevention interventions.

Some work has examined providers' perspectives on social barriers to health in practice. In terms of lifestyle behaviours specifically, one study that looked at the perspectives of providers in an underserved environment focussed on provider perceptions of patient barriers to weight loss, and identified many (Woodruff, Schauer, Addison, Gehlot, & Kegler, 2016), though it did not detail how providers responded to those barriers. In terms of how providers might view their role in addressing social factors in practice, reports by both the BMA and CMA outlined possible approaches, gathered from providers already engaging with social determinants in practice (BMA, 2011; Canadian Medical Association, 2013b).

Beyond detailing what has been done by providers already involved, further work has also examined how primary care providers in general respond to social barriers to health. One study examining how social factors influenced general practice found social problems influenced management to include extra time in a consultation, advice, as well as sick leave, or medication, much more often than referral to community services (Gulbrandsen, Fugelli, Sandvik, &

Hjortdahl, 1998). A later study in the UK found general practitioners identified a range of social problems in their patient presentations, and made referrals to services outside their practices, though the range of services to which they referred, particularly community groups, was narrow (Popay, Kowarzik, Mallinson, Mackian, & Barker, 2007). Though these studies provide some insight as to what providers are doing in practice, how providers define their roles, and the extent (if at all) that they engage with social barriers in the context of behaviour counseling, remains less well understood. Therefore, despite growing calls for physician action on the social determinants of health and patient health behaviours, most studies in the context of higher risk populations have focussed on the efficacy of interventions, and not how providers have adapted to a changing scope of practice that increasingly includes counseling, and the role they see for themselves in addressing the social factors affecting patient's health.

Physical activity counseling, as a health behaviour known to be affected by so many external factors in patient's lives, offers a lens through which to examine counseling in primary care and how providers view their role in addressing the social barriers to health that patients face.

1.4.3 Potential for differences based on provider discipline

Finally, when examining how primary care providers have incorporated physical activity counseling in primary care, it is important to consider the potential differences that may exist based on provider discipline (physicians, nurse practitioners, nurses, health educators, etc). With the growing costs of health care, there is an interest in shifting from physician based to team models of health care delivery (Reay, Goodrick, Casebeer, & Hinings, 2013). As a result, primary care is an increasingly multi-disciplinary field, and several different disciplines of primary care providers may engage in physical activity counseling. A systematic review found that 37% of interventions were by physicians alone, 37% by allied health alone and 26% involved a combination of physicians and allied health interventions (in this review allied health appeared to include any of health educator, health specialist, research assistant, nurse, or exercise specialist) (Tulloch, Fortier, & Hogg, 2006). There are differences globally in the balance of which providers counsel more. A Brazilian study found that counseling is still more common among physicians than nurses (Florindo et al., 2013), though a study in Catalan found more nurses than physicians reported promoting physical activity in their practices (Ribera, McKenna,

& Riddoch, 2005). In Canada, nurse practitioners reported prescribing physical activity to more than half of their patients (Lamarche & Vallance, 2013). Though variations remain in the degree to which different disciplines engage in physical activity counseling, counseling on physical activity has been recommended in the literature as a component of practice for physicians (AuYoung et al., 2016) nurse practitioners (Peterson, 2007), and nurses (Richards, 2015).

As an increasing range of health disciplines are potentially engaging in physical activity counseling, there may be differences in how each discipline experiences physical activity counseling. There has been considerable work showing the potential for nurses and other health disciplines to have different (and generally more positive) attitudes towards counseling when compared to physicians. One study found that health visitors and nurses were more likely than general practitioners to believe their advice would be effective, and lack of time and resources were barriers more likely to be reported by general practitioners than by nurses or health visitors (Douglas et al., 2006). Further, a systematic review found that in studies of both physicians and nurses, physicians were more likely than nurses to cite described barriers as a major impediment to counseling (Hébert et al., 2012).

There may also be differences in how counseling by different provider disciplines is perceived by patients. Like with physicians, trust is an important component of nursing practice (Bell & Duffy, 2009; Oandasan et al., 2010). However, how patients trust and respond to counseling from different disciplines is less clear. One study on congenital heart disease found patients endorsed higher trust with physicians than nurse practitioners, even though they reported being satisfied with a nurse practitioner providing care (Maul et al., 2015). In contrast, it has also been suggested that counseling by allied health alone, or by physicians and allied health (as per Tulloch et al., 2006), may be more effective in the long term than counseling by physicians alone (Tulloch et al., 2006; Vuori et al., 2013).

Though this evidence suggests that differences in perspectives on counseling based on provider discipline exist, what those differences represent in terms of how providers have navigated the incorporation of physical activity counseling into primary care, and how they view their roles, is less clear.

Disciplinary roles are well established, and enforced by education, professional organizations, legislation, and the need for disciplines to navigate working alongside one another in the health system (Reay et al., 2013). It is known that boundaries between disciplines, both material and socio-cognitive, can slow innovation spread (Ferlie et al., 2005). There has also been the suggestion that different disciplines of providers engage with the literature differently, with different knowledge bases, and research agendas, and so may evaluate the same evidence through different lenses (Ferlie et al., 2005). Further, lack of shared definitions for role boundaries and role scope, in particular in relation to nursing, may affect providers' ability to engage with and autonomously incorporate new innovations (Pearson, 2003). As this study took place in an interdisciplinary practice, we had the opportunity to examine how providers perceive physical activity, and how that might differ by discipline.

1.5 Research Question

In this thesis, I examine how a clinic group of multidisciplinary providers perceive physical activity, their perspectives on physical activity counseling, and how they engage with the psychosocial barriers to health behaviours experienced by patients.

Chapter 2

2 Methods

2.1 Theoretical foundations

Epistemologically, this study was informed by a co-constructivist perspective, with the recognition that the findings are to be framed as the results of my understanding and interpretation of the views providers presented in the focus groups, as opposed to being presented as objective facts. This is consistent with Crotty's (1998) interpretation of constructivism, as my objective was to try to present findings that do not represent a universal truth, but that are the result of the analysis of data produced through the interaction of the participants and myself. This positioning is appropriate, as the goal of this study is to understand providers' perspectives. As perspectives are not static or objective entities, but social phenomena, this constructivist approach allowed me to consider my findings as the result of a complex social dynamic, in which I as a researcher was a part. This not only directed me to consider the highly contextualized nature of my findings, but also highlighted the relevance of my position to my work, so that awareness could contribute to a more thoughtful analytic process.

The study design and analysis were informed by a qualitative descriptive design (Sandelowski, 2000). The use of qualitative description, (one example of a "generic" qualitative method as per Kahlke, 2014), afforded me the ability to examine provider perspectives more generally without restricting my study to fulfill the expectations of more traditional methodologies. Therefore, qualitative description offered an approach that allowed me a comprehensive summary of the experiences described without an "in-depth level" of interpretation (Milne & Oberle, 2005). Qualitative description allowed me to stay "closer to the data" (Sandelowski, 2010), than other methodological qualitative traditions such as phenomenology, where I would aim to interpret the meaning of lived experiences (Chamberlain, 2009; Wojnar & Swanson, 2007), or grounded theory, which I would use to develop an explanatory theoretical framework (Starks & Trinidad, 2007). Additionally, a qualitative descriptive method was congruent with my constructivist epistemology, and was consistent with the use of focus groups as a method (Kahlke, 2014).

Further, qualitative description has been argued to be less theory driven than other methodologies (Kahlke, 2014; Sandelowski, 2000), which was appropriate here as my objective in this study was not to infer any connection between the data and a pre-existing “conceptual, philosophical, or otherwise highly abstract framework or system” (Sandelowski, 2000), but to develop at a basic level a better understanding of the perspectives of providers on physical activity counseling practices. Given that my objective was to examine broadly providers’ perspectives on physical activity counseling, without assumptions about the kinds of findings that would be discussed, the theory reviewed was guided by the findings, as opposed to chosen *a priori* with the objective of applying findings within their framework. However, though there was no specific chosen theoretical framework through which I aimed to interpret findings, the presentation of this study, and in particular the analysis, could not be completely apart from theory. As detailed in the introduction, I chose to draw from a range of theoretical areas in the literature which provided me with context for understanding what my findings might represent, including medicalization, public health, and the development of, and change in, professional and interprofessional scope of practice boundaries. These theories were chosen in part because they lent themselves well to the research areas this study was designed to examine, and because they were felt to be issues relevant to the types of discussions identified in the iterative analysis (see analysis section below).

Finally, I would like to note here my position relative to this study. Qualitative research requires authors to engage in “reflexivity” (Mauthner & Doucet, 2003), that is, to recognize, acknowledge, and explicitly state their positionality with respect to their work. This is also an important component of rigor in qualitative descriptive work (Milne & Oberle, 2005). The following is a brief review of my position, and the ways in which I am aware of its influence. As a physician, I was more comfortable with, and knowledgeable of, the practices of physicians rather than nurses and nurse practitioners. Additionally, I chose to pursue this study because I had specific interest in these subjects. After my medical training, I wished I knew more about physical activity counseling, and I also had an interest in social determinants of health and hypothesized that as physical activity is related to so many other aspects of patients’ lives, physical activity counseling may be a useful lens through which to consider the way providers perceive the role of social determinants in their practices. As a result, during the focus groups I encouraged participants to discuss aspects of how social determinants might influence their

experiences – for example, they were asked to explain how they would describe their practices, and any challenges they faced. My position is also relevant for the findings and interpretation of this study, as there was a natural tendency for me to focus on areas I perceived were important or relevant. For example, as a primary care physician, how to approach patients who may not fit guidelines, and to what extent (and how) to address the social factors that shape patient health in a clinical setting, were questions that felt directly relevant to primary care, and as they were questions that had yet to be fully answered by the literature, discussion of findings from the data related to those questions was felt to be important to include.

2.2 Design

This study design was a qualitative descriptive analysis of single primary care clinic group setting of multidisciplinary providers. The primary method I used to collect data was focus groups delineated by health discipline, though there was also a short descriptive survey for participants. Focus groups were chosen because the aim of this study was not to develop rich descriptions of individual perspectives, but to try to characterize the perspective of health professionals as a collective of providers regarding a practice they were engaging with (Gill, Stewart, Treasure, & Chadwick, 2008; Morgan, 1996). The clinic group involved was chosen because of its geographic location, its reputation for serving patients with complex needs and because it was amenable to being part of this thesis project. As the ultimate objective was to conduct research of use to providers, the research question, including the aim of designing feedback of clinical relevance for the site, was developed with the clinic group of study. This was done to maximize the utility of the project, and to ensure the area of focus for the study would be made with the preferences of the study population in mind.

This borrows from the approach of participatory action research in two ways – by including the participation of the study site in the initial selection of the study focus, and by incorporating a focus on an actionable change in that the results of the study would lead to some form of feedback to the site (Kidd & Kral, 2005). It is important to be clear that though this study benefitted from the inclusion of elements of participatory action methods, it does not meet the requirements or expectations of a true participatory action study. Participatory action research involves the explicit inclusion of participants as active members of the research itself, involved

in an ongoing democratic way in decision making throughout the research process (Meyer, 2000). In this study, while the development of initial research questions was done with input from the site in mind, decisions about the study structure were ultimately made by myself and my supervisors exclusively, excluding this study from being considered participatory action based. As participants would have known each other from their clinical setting, including them in analysis could have raised concerns regarding confidentiality. Additionally, making decisions at the level of the committee group allowed for decisions about the scope of the project to be informed by what was attainable within of the limitations of a master's thesis. For example, the initial aim of using a study of provider perspectives to inform the development of feedback to the site was included here because it informed the motivation for this study. However, the feedback portion was ultimately beyond the scope for this thesis, and so the decision was made to separate the two goals, with this thesis focussed on understanding provider perspectives, and the aim of subsequently returning to the site to review with them what feedback would then be most useful. Ethics approval for the study was provided by the University of Toronto Research Ethics Board.

2.3 Setting

The choice to conduct the study in a Community Health Centre (CHC) setting was made because of several particular aspects of CHC practices. Primary care delivery in Ontario is organized into a set of different funding models, that vary in the form of remuneration physicians receive (capitation, fee-for-service, or blended), the requirements and structure of after-hours access, and the degree of integrated interdisciplinary supports (Glazier, Zagorski, & Rayner, 2012; Health Force Ontario, 2017). For example, both Community Health Centres (CHCs) and Family Health Teams (FHTs), specifically include an interdisciplinary team (Glazier et al., 2012) CHCs are community-governed models of primary care delivery, in practice in Ontario for decades, that are specifically oriented to the delivery of care to socially disadvantaged or harder to serve populations (Glazier et al., 2012; Rayner & Muldoo, 2017). Therefore, there are several advantages to conducting this study within a CHC setting. Firstly, the principle motivation for the choice of a CHC was the aim of this study to examine the extent to which social determinants influence provider's experiences with physical activity counseling. CHCs have been known to include an interest in upstream determinants of health in their mandate, and generally target underserved communities (Collins, Resendes, & Dunn, 2014). As a result, it was reasonable to

assume that providers in this setting would be likely to interact with populations that may be particularly vulnerable to social barriers, and so providers in this setting may be uniquely qualified to comment on how that affects their practices.

Secondly, there has also been a debate about the extent to which CHCs are uniquely engaged in health promotion or preventative care practices. An early study suggested CHCs may not necessarily have greater prevention practices (Abelson & Lomas, 1990), though subsequent work suggested that compared to other models of primary care delivery, CHCs offered higher rates of health promotion (Hogg et al., 2009), and CHCs serving uninsured or refugee women had a cervical cancer screening rate higher than the equivalent local population (Wiedmeyer, Lofters, & Rashid, 2012). It may be that the relationship between practice organization and health promotion is more complex than just the funding model, as it has been suggested that organizational structure, physician characteristics and practice structure may be better predictors of preventative care practices (Dahrouge et al., 2012; Thind, Feightner, Stewart, Thorpe, & Burt, 2008). Additionally, CHC populations may have particular need for preventative care services. One study noted that the likelihood of discussing health lifestyle was greater for those under age 30 compared to those that were older only at CHCs, which was felt to be an appropriate response to the higher needs of CHC populations of those ages (Dahrouge et al., 2011). Overall, this suggests that CHCs may have a unique perspective on the provision of preventative health care to high risk populations, as they engage in at least as much, if not more, promotion and prevention programs than other primary care models, and serve populations where promotion is particularly relevant. As physical activity counseling is a component of preventative care, it was reasonable to assume that physical activity counseling would be a practice that would be of relevance in a CHC setting, and so there was a better chance providers would have been exposed to physical activity counseling and/or have opinions about it as a practice, providing a potential for richer data on provider perspectives in this area.

The final reason for our choice of a CHC setting is the opportunity it affords to examine different provider disciplines. In comparison to some of the other primary care models in Ontario, CHCs are particularly multidisciplinary (Muldoon, Rowan, Geneau, Hogg, & Coulson, 2006), and studies have found a range of physician, nurse practitioner, and shared care delivery for primary care (Dahrouge et al., 2014). Even the early study that suggested that there may not be a

difference in preventative health practices between CHCs and other models did note that non-physician personnel were more likely to be involved in preventative care in CHC practices (Abelson & Lomas, 1990). CHCs have also been the setting for studies of interdisciplinary perspectives at the primary care level before (Rayner & Muldoo, 2017). The capacity to examine the role of SDOH in a setting suggested to have a particular focus on preventative care, with the inclusion of different health disciplines, made a CHC the ideal setting for this study.

The CHC site for this study was a multi-site clinic group in a suburban setting. Several disciplines were in practice there at the time of study including physicians, nurses, nurse practitioners and dieticians. Among the disciplines ultimately included in this study (physicians, nurse practitioners and nurses), the providers who chose to participate represented a large majority of those in practice at the CHC. For the community the CHC served, 25% of census families were lone-parent in 2016, compared to 16% at the national level (Statistics Canada, 2017). 52% of the population reported speaking a mother tongue other than English or French (Statistics Canada, 2017). In 2015 the median total income was \$25,285, compared to a national median total income of \$34,304 (Statistics Canada, 2017).

2.4 Sample

All providers practicing at the specific suburban clinic group selected for this study were eligible to participate. Prior to the data collection, I visited the site during a meeting, to introduce myself and the study objective. All primary care providers at this clinic group, regardless of discipline of practice were eligible to participate in the focus groups. Before the date for the focus groups, all the providers were contacted by e-mail with information regarding the study and an invitation to participate, with the researcher's contact information included to discuss any questions. For each focus group, I and my supervisor (MPS) met the participants at their group meeting, where participants had another opportunity to review any questions regarding the study prior to providing written consent. Providers who expressed an interest in participating then stayed to complete the demographic survey and focus groups. Initially, the aim had been to include all providers, in three focus groups – one each of physicians, nurses/nurse practitioners, and allied health staff/administrators. However, on the day set aside for the allied health staff/administrators focus group, none of these individuals were interested in participating, so it

was cancelled. Thus, only two focus groups were conducted, one for physicians which included 5 participants, and one for nurses/nurse practitioners which included 7 participants.

2.5 Data collection

Qualitative semi-structured focus groups were used as the primary method of data collection (see Appendix 1 for focus group guide). This was combined with a brief demographic questionnaire for each participant, which was distributed and completed prior to the focus group (see Appendix 2 for survey). The survey was to provide general demographic details about participants (discipline, location of practice, years and type of experience, etc). The aim of the survey was to collect general background information on provider work experience to provide baseline data on the focus groups participants. The focus group guide (see Appendix 1) was designed to help facilitators cover key areas for the study scope including providers' experiences with physical activity counseling, their perspectives on their practice populations and the barriers or social factors shaping their health, and their ongoing needs in terms of tools or resources to support physical activity counseling in practice. The guide was developed in conjunction between myself and supervisor MPS. Initial drafts included questions relating to general background, current practices, barriers, specific population groups, and needs assessment for possible feedback tool design, but were too lengthy. The guide was iteratively reviewed and refined by myself and supervisor MPS both in preparation for ethics application and between the first and second focus group to streamline the number of questions, reword questions to better encourage discussion and richer data collection, and to include timing suggestions for each questions section to help the focus group facilitator guide the group. Prior to doing the focus groups the guide was tested in a mock focus group I facilitated, attended by physician peers not included in this study. A focus group model was chosen as it provided the opportunity for a deeper discussion to help understand the group level interpretations, including motivators and barriers (Gill et al., 2008; Morgan, 1996). The hope was that the use of focus groups would allow providers to describe their individual perspectives, and also to discuss, or even challenge, each other's perspectives, to allow me to examine the perspectives of providers as a group. This method also allowed for the group to interact to develop a collective idea of what would be most useful to them in a clinical tool (Morgan, 1996). Finally, it also fostered the timely acquisition of data, in a way that minimally disrupted participants' schedules, as focus groups were conducted following whole

team meetings. The choice to conduct focus groups defined by discipline not only allowed me to group participants by common identity, but was based on the assumption that different provider disciplines may experience physical activity counseling differently, and to allow for contrast between the groups during analysis. The inclusion of focus groups was also felt to be appropriate for this study as it is a method that has previously been used in studies of primary care provider perspectives (Drewes et al., 2012; Prouty et al., 2014; Teng et al., 2014; Van Peet, Drewes, Gussekloo, & De Ruijter, 2015), and more specifically in the study of primary care perspective with regards to physical activity prescriptions (Persson, Brorsson, Ekvall Hansson, Troein, & Strandberg, 2013b).

The two focus groups took place one month apart in the fall of 2016. I and my supervisor MPS were in attendance for both focus groups. The first focus group included five physicians, was led by MPS and observed by myself and lasted approximately 44 minutes. The second focus group included 7 nurses and nurse practitioners, was led by myself and observed by MPS and lasted approximately 49 minutes. Both members of the research team involved in analysis (myself and MPS) were present for each focus group. . The focus groups were audio recorded by electronic recorder. Both focus group recordings were transcribed verbatim by myself. All participants were anonymized and identified by a unique project identifier, and all other names mentioned during the focus groups were removed.

2.6 Analysis

Analysis was conducted from late fall 2016 until spring 2018, with a first round from late fall 2016 to Spring 2017, and a second round of analysis in early 2018. During the first round of analysis, both transcripts were reviewed by myself and my supervisor (MPS). A thematic approach was employed, where I lead the analysis, with MPS providing support and guidance throughout, with initial ideas discussed and themes corroborated during regular meetings, and findings further refined independently. The demographic data provided some context for the work/professional background of participants. On review of the transcripts, the demographic data were determined to largely not be able to inform the qualitative analysis as there was felt to be insufficient numbers of participants to draw definitive conclusions based on any comparisons in the focus group data due to demographic differences. Initially the focus was on immersion in the

focus group transcripts to help identify the overall points of interest to the participants. I reviewed the transcripts in detail, using memoing of key ideas in the margins of transcripts line by line to develop a full suite of possible themes. Transcripts were then reviewed again, and I revised the themes, grouping them into key categories felt to be represented in the data and relevant to the objective of study, with the assistance of discussions with MPS, who reviewed and discussed changes to the substance and organization of the findings repeatedly throughout theme development (similar to the approach described in (Braun & Clarke, 2006)). These findings were used to inform the initial approach to the thesis.

It should be noted that these findings focussed largely on grouping together common categories of discussion in the data – for example strategies and barriers, descriptions of practice composition - and so with further review and guidance from my committee, it became clear that I had fallen victim to a concern highlighted by Sandelowski (Sandelowski, 2010), in that analysis to that point had been on grouping the data into categories of quotes, without substantive analysis of what those findings meant in the context of the literature and the questions I hoped to answer. To address this concern, I first reviewed some of the literature outside of my more traditionally medical background, such as medicalization, implementation and the study of practice change, interprofessional dynamics and trends in public health. These areas were chosen because for this study I was interested in examining how providers approach physical activity counseling, how they do so in the context of patients' lives outside of clinic, and to what extent perspectives might differ based on discipline. Underlying these questions are components of the above bodies of theory such as the framing of behaviours as a medical problem, the inclusion of counseling as a health practice, the increasing focus on health risks rather than diseases, how providers adapt to changes in practice, and how different disciplines define their scopes of practice.

With more familiarity with this literature, I returned to the original transcripts and wrote detailed descriptions of my interpretations of what was being said, and why that might be relevant to these broader debates, and where possible, if there were different interpretations that I could perceive. Review of the transcripts and these notes led to the development of a range of different elements that addressed my research interests. Ultimately, three main themes that addressed my research questions emerged. Some elements seen in the data, such as examples of approaches to physical activity counseling, strategies providers used in counseling, and listing of facilitators

and barriers were not included as they reflected areas where there had already been a considerable body of work, and there was the concern that these more basic descriptions might miss the opportunity to consider what providers' descriptions of what they did represented for how they approached and understood their practice. Finally, the transcripts were again reviewed, with the relevance of each quote to the chosen themes highlighted. I created a document that included the memoing, listing of themes, chosen themes, and identification of quotes as relating to themes, to facilitate an audit trail (Creswell & Miller, 2000). As with the previous analysis, the process was reviewed in detail with MPS, who herself was familiar with the data. The findings detailed below are the result of this process.

Chapter 3

3 Findings

3.1 Findings Overview

The survey data, included in Table 3, showed that most providers had been in practice for several years (8 providers had been in practice for 3-5 years, and 4 had been in practice 7-15 years), all providers had worked >3 years in multidisciplinary teams, and all but two participants had spent >3 years at their current site. All providers were full time except for 2 out of 5 physicians. Several nurse practitioners identified that they had previously worked as nurses for several years before becoming nurse practitioners. One of the more notable findings was that all providers, including almost all nurses (with only one exception, who felt neutral), generally felt positively towards the statement “Physical activity counseling is an integral part of practice for my discipline”, which was in marked contrast to the focus group findings, see below, where nurses repeatedly articulated that physical activity counseling was not something they had the opportunity to engage with.

In reviewing the transcripts, three main themes emerged, which collectively suggested the extent to which physical activity was seen as a health issue, with counseling for it a routine practice, despite several challenges providers perceived both in the provision of their counseling, and in the ability of different disciplines to engage in counseling practices.

The first theme was how providers understood physical activity and counseling for it. Providers described physical activity as a health issue, and counseling was an accepted treatment modality in primary care. However, providers also acknowledged that physical activity participation was influenced by a range of factors in patients’ lives, and that patients’ social circumstances influenced their health. There were also instances where providers noted that there were gaps between their framing of physical activity in the context of physical activity counseling and what physical activity represented to their patients.

The second theme related to how providers perceived their experiences of physical activity counseling in practice. Physical activity counseling was widely accepted, and viewed as appropriate, though there was a lack of consensus among providers on how effective they had

perceived their counseling experiences to be. Despite being a routine and accepted practice, there were two main areas where providers felt challenged in their experiences with physical activity counseling. The first was a need for further guidance on how to bridge from guideline recommendations to specific plans for patients. Secondly, providers identified that part of counseling should include an assessment of the barriers patients may face to physical activity, including social barriers. Providers identified a range of approaches for how to integrate their knowledge of those barriers into their practice, but highlighted a desire for further tools and supports to assist them.

Finally, the third theme identified significant differences among health disciplines in terms of involvement in physical activity counseling, and who was, or should be responsible for giving it. Both groups felt that a patients' main provider was ultimately responsible for ensuring counseling had been given, but physicians in particular felt that provision of the counseling was a shared responsibility among team members, while nurses felt it was only the role of nurse practitioners and physicians. Nurses identified as not providing counseling despite feeling it was related to other parts of their scope of practice, and there was some discussion of the reasons why that might be the case, including structural limitations in terms of time, and scheduling, how their scope of practice was defined and whether they could engage with new practices without specific training, and the need for counseling to be accepted as a routine part of nursing care.

3.2 Providers' understanding of physical activity

Theme summary

Providers described physical activity as a medical issue, understood by how it related to health. Physical activity counseling was a largely accepted component of primary care, framed as relevant to a range of illnesses, and evaluated based on its health impact as a treatment modality. However, providers also acknowledged that physical activity was not exclusively a medical issue, and that their patients' health, and physical activity participation, were shaped by a range of social factors in patients' lives. It was also noted that there could be the potential for gaps between providers' medical understanding of physical activity as relevant for health, and the beliefs about physical activity their patients' may hold.

Physical activity as a medical issue

Physical activity was understood as an integral component to health (see Table 4). It was seen as universally relevant, an unquestioned part of health, that was particularly important when considering some medical conditions.

NP5: ...there's always a reason, right, for overall health, benefits, talking about cholesterol, hypertension, diabetes, whatever? You know, it's got multiple benefits there, and then of course stress reduction, and you know, I just, uh, um, (pretty well?) just anything, I mean it's obvious right? Overall good, good health has to incorporate activity

MD3: I include physical activity in almost all of my medical problems, mental health, substance, smoking cessation programs, diabetes, weight loss, knee/joint pains, back pain. Everything includes physical activity.

The view of physical activity as fundamental to health, informed how providers framed physical activity. Providers frequently described physical activity as a health issue, and counseling for it was seen as a medical tool, which was indicated in response to particular diagnoses where the provider felt it would be relevant.

MD5: Usually, I am asking the question when I, I figure, I realize they have a health problem that would, that they would really benefit from getting some extra physical activity.

Physical activity counseling itself was also a generally accepted component of primary care practice (see Table 4). Physical activity counseling was understood as a routine component of care, relevant to medical practice because of its applicability to a range of health issues.

MD3: I include physical activity in almost all of my medical problems, mental health, substance, smoking cessation programs, diabetes, weight loss, knee/joint pains, back pain. Everything includes physical activity. I print out this, only, not only for diabetic patients, for all of my, where, where I thought exercise is indicated, yeah.

The only time that physical activity counseling was questioned was by one participant towards the end of the nursing focus group, who questioned whether primary care providers had the knowledge, time and training to do it.

Nurse1: how can you do this in a practical way, you can keep reminding the person but, it's not possible in, in a regular primary care, to do that individualized approach with exercises, when you're saying, ok this, this type of exercise is for you, if you have bad knees you don't do this, this exercise you do...like, what even is the role of the primary care practitioner in exercise counseling? Because knowledge, time, and whether we are actually the right person, right people to do that, because it's, let's say for example, when we do smoking cessation, then I have received a lot of training on smoking cessation, it's a program-based, it's individual based, like you do complete assessment of the person, right? Then you create the program for that specific person.

However, even in that conversation, the idea that physical activity counseling was an accepted component of primary care practice was raised a few seconds later (see Table 4). Overall, both groups framed physical activity as important for health, and counseling for it as an accepted part of primary medical care.

Even the efficacy of physical activity counseling was sometimes measured in a medical way. Positive outcomes were viewed in terms of the effectiveness of physical activity as a treatment modality, as an alternative to medications, or in terms of its ability to improve measureable health outcomes.

NP7: Your priority medication is your physical activity and then lifestyle management, eating your balance. So I put that right on top. Physical activity is right on top, then comes your balanced eating, and then comes the medication and all of that. So, if you do what, which is right on top, then maybe we have a chance of working on the others, right?

These findings highlighted how participants in this study understood physical activity as a medical issue, with counseling for it a recommendation that was indicated for particular medical diagnoses, and seen as effective by any corresponding changes in measurable health outcomes.

Physical activity as a social issue

Providers also noted that physical activity was not exclusively understood as a medical issue, but shaped by other parts of their patients' lives. In general providers were aware of the influence of social factors on their patients' broader health. For example, when describing their practices, they would list not only the medical presentations which they saw most often, but also the social factors that they reported represented their patients, which demonstrated how the broader social factors of patients' lives were being recognized by providers as relevant to health and contributory to the complex challenges of health care provision.

MD2: There's, a lot of them are complex mental health, a lot of uninsured clients, without health cards, obviously, I think that's true for everybody here. And also pretty complex multi-system disorders, like, you know, pretty difficult to control hypertension, or diabetes, or kidney disease. So multi-system failure, sort of things like that

MD5: Children with behavioural problems, adults with developmental disabilities, and immigrants, refugees, and young families, I think is my most common.

In terms of physical activity specifically, providers noted that the choice to participate in physical activity could sometimes be shaped more by patients' interests and lives outside of the clinic than by their health.

Nurse3: yeah, and what do they see as constituting physical activity...cause for some people it means going to the gym, and for others it means, gardening, right?

When discussing physical activity from the perspective of patients, there was a particular focus on physical activity as enjoyable. Physical activity was seen as something that would be incorporated into patient's lives, not because patients were directed to do so by a health care

provider, or to improve their health, but because it was something that was a positive experience for patients.

MD2: I would ask them, you know, is physical activity a part of your daily life? Is it something that, you know, you do every day, or something you do, you know, to achieve certain goals, or you don't do it at all?

Some providers did note the potential for a gap between their medically-informed understanding of physical activity, and the beliefs regarding physical activity that providers perceived their patients' held.

MD4: culturally we have to identify things, and I think we see some of that in ---...I'm looking at ----- because we've had this discussion before. Some of our South Asians think breathing exercises count as exercise...and so we have to do some education as to what we mean by exercise. We mean cardio, so.

The fact that patients may not consider physical activity a health issue was seen to also impact the ability of providers to give physical activity counseling. The fact that patients would never book an appointment for physical activity counseling impacted the time available for counseling, but also implied that patients did not see physical activity as a health behaviour warranting its own assessment, in the way that they did for other health behaviours like smoking cessation.

MD4: I would say client priorities can be a barrier. So, you know clients usually, very rarely will book an appointment to discuss exercise. And so, even smoking, they will book an appointment sometimes to discuss it, and, and that's very useful, right? Because then we have a dedicated visit for smoking cessation. And that number one it shows that they're motivated, the fact that they're doing it, and it tends to, I find it tends to be very useful to dedicate time. I don't, I can't think of one time a client has ever booked an appointment, reason for visit, to discuss exercise. So, I think that's a barrier, the fact that that's never happened. So we always have to squeeze it into another visit for another purpose.

3.3 Experiences of physical activity counseling in practice

Theme summary

Physical activity counseling was reported to be routinely integrated into primary care practice. It was viewed as an appropriate practice, though providers were less clear on whether their counseling was usually effective, or whether change in physical activity would fundamentally change health outcomes. There were two principle areas where providers felt challenged in their experiences with physical activity counseling practice. Firstly, there was an interest in further guidance for counseling, particularly for some conditions, and for more specific individualized recommendations for types of activity appropriate for patients. Secondly, though there was an expectation that counseling involved the identification of social barriers to physical activity, providers were less sure how to address these barriers in their practices. Providers engaged with patient barriers in different ways – by tailoring their advice, referring to external resources, or actively trying to mediate barriers themselves, though they noted a desire for supports to assist them, and a need for broader programs outside the health system to effectively help patients. There were also circumstances where providers recognized physical activity may not be a priority for their patients, and counseling in the face of patient barriers could be challenging.

Physical activity counseling was routinely used in practice

Providers described physical activity counseling as being a common component of their practices, indicated for a broad range of health conditions, and as a component of annual health visits. The applicability of physical activity to a range of health issues meant that providers cited engaging in physical activity counseling on a daily basis, and for some patients, at almost every visit.

MD3: I include physical activity in almost all of my medical problems, mental health, substance, smoking cessation programs, diabetes, weight loss, knee/joint pains, back pain. Everything includes physical activity. I print out this, only, not only for diabetic patients, for all of my, where, where I thought exercise is indicated, yeah.

NP5: Anyway, I think physical activity is like probably daily, I discuss (physical activity?) with my clients. I think it's like, overall, I think I should try to get my clients to continue to move, you know for whatever reason, there's always a reason, right, for overall health, benefits, talking about cholesterol, hypertension, diabetes, whatever? You know, it's got multiple benefits there, and then of course stress reduction, and you know, I just, uh, um, (pretty well?) just anything, I mean it's obvious right? Overall good, good health has to incorporate activity.

Physical activity counseling was not only a routine part of practice, but was also presented as something that not only *could* be discussed, but *should* be discussed. Providers referenced the provision of physical activity counseling as an “appropriate recommendation”, and one that is founded on evidence.

MD4: And then, I agree, with some of the mental health clients, particularly mild to moderate depression, we have noticed benefit and we do make the appropriate recommendation.

Though physical activity counseling was reported to be a common and appropriate practice, there was a lack of consensus in the groups on whether they perceived their advice as able to motivate patient behaviour change. There were some instances where providers noted that they did perceive positive change as a result of their counseling, however providers also noted experiences where they felt their counseling was not effective and did not result in change in health behaviours (see Table 5). Significantly, despite the lack of positive feedback in terms of behaviour change, providers noted they continued to provide activity counseling, sometimes trialing different approaches.

MD5: But at the same time, I don't, I'm not too sure how much impact we always get. There are some people who really take your, your guidelines to heart, and the next time you see them it's amazing, it's changed everything, and they do a whole new exercise regime. And then there are other people who, yeah, I heard what you said but... even this morning a lady said Oh, I, you, I've been seeing you for 5 years, and every time you ask me if I exercise, and she's like, No! I don't exercise.

MD1: And how many those did we try, we didn't, you ask them to do this, this didn't work, so ok, let's try a different version, let's try a different approach, and it's just, if there was one great approach, or two great approaches, that worked with most of our patients, I'm sure we all would be doing it. But it is one of those things that we're constantly trying to find something that works well.

Additionally, despite the general consensus on the importance of physical activity for health, providers were not always clear on the extent to which changes in patient physical activity would fundamentally alter health outcomes. One provider noted that in motivating patients to become active, they were careful about the expectations of benefit they were suggesting, as even though physical activity could be presented as a treatment modality, improving activity did not guarantee a change in illness progression, or the need for medication.

MD4: I'm just identifying it and then giving them their other options. But still making appropriate recommendations. But I do notice that fear. Like I don't play on their fear, I don't, I don't try to make it look like, oh, yeah, yeah, you're going to be on insulin if you don't start exercising. Because, the danger of that is, you know, in all seriousness, is that some people can do all the right things, make all the diet changes, do all the exercise, and they still end up needing oral hypoglycemics and insulin, so you really don't want to set your client up for failure, and you know, set them up with an impossible goal of not being on any pharmacotherapy when that's clearly the direction they're going.

Challenges to physical activity counseling: Gaps between guidelines and practice

There were several areas where providers identified a need for further guidance, or resources. In particular, providers noted a lack of clear guidance for how to counsel on activity based on particular medical conditions such as mental health conditions or musculoskeletal disorders. There was a desire for more detailed advice, specific to particular diagnoses, to allow them to give specialized counseling to populations they perceived as challenging.

MD4: Yes, I would say specifically it would be nice if there was something for mental health clients, as an example, to show them the benefits, number one...And then the

other biggest barrier, like -- said, is people's physical limitations. And so on one hand, and I'll be honest, to me that's a, that's a real challenge I have, right? Someone comes in, they have physical limitations, they can't move a lot, but they need to move more, in some ways it's more important for them to get into a good exercise routine than, than some of my other clients. But even I have trouble guiding them as to what they should do. I don't want to make their pain worse, and so it is a bit of a struggle. Now, to be fair, that's where we use physio, sometimes I even use physiatry, so, you know, we lean on our colleagues for that. But, but that's that would be helpful, with, you know, people with...cardiovascular disease used to be challenging and then they developed the whole cardiac rehab program, right? So now they've kind of made it easy for us, go to cardiac rehab, they'll, they'll take care of that. It would be nice if we had that for some of the, you know, chronic MSK issues.

In general, there was a desire for more detailed information. There was a perception that good counseling not only gave a general recommendation, such as a certain amount of time per week, but should be targeting the individual by suggesting what type of activity, for how long and what frequency. Providers generally appeared less comfortable translating broad recommendations into specific types of activity, and expressed an interest in resources that framed activity in a way that was more approachable for patients and providers.

MD5: So the, the amount. Something concrete, so how, for how, what type of activity and for how long, and how often. As part of the recommendation based on your counseling discussion, I think. And then, because we, we, are obviously obsessed with barriers, identifying some of the things that are barriers, so that it makes it easier to make the appropriate prescription.

Challenges to physical activity counseling: social barriers to physical activity

Another challenge providers faced in the provision of physical activity counseling was how to engage with the broader social factors affecting patients' abilities to exercise. There was a general sense that the patients providers were serving faced considerable barriers in their ability to exercise, and that the identification of those barriers was an integral component of physical activity counseling.

MD2: Two is the finance, a lot of our clients are on social assistance, so they are living, you know, paycheck to paycheck. And out of that paycheck you know, they have to have rent and food and clothing, and there may not be 40-50 dollars a month left to spend on Goodlife fitness benefit plan or something like this. And accessibility is the other thing, is a lot of them don't drive, and may not be able to commute to clubs. And the very last thing essentially is the physical barrier, and that's essentially, you know, bad knees. Ok, I may not be able to exercise on a treadmill, but there is no pool nearby where I can swim or do other exercises. Or low back pain, or, you know, poorly controlled blood pressure, therefore they can't exercise because it's going to exacerbate it even more. So these are, sort of, some barriers. So, more, I wouldn't say more, more barriers than average, but because we deal with a very special client population, there is a little bit more, I think, barriers than I would say on average here.

MD5: And so I, I usually ask, you know, like what kind of things do you do for exercise, usually people say "I walk", (laughter), and then that's about it, and then we talk about what other things they can do. And, and talk about barriers that they might have.

However, how providers might address those barriers once they were identified was less clear. There were a few different approaches for how providers might incorporate their understanding of patient barriers into their practice of physical activity counseling. One approach was to make specific recommendations, and tailor their advice based on providers' knowledge of resources outside the clinic space that could address barriers. Providers appeared to feel a knowledge of these resources was important, and cited an awareness of accessible gym spaces in their area. They also identified an ability to refer to other members of the treatment team, such as social workers, when they there was a need for community resources they were not familiar with.

MD5; And then some people do get into exercise programs, but the cost, like as -- was mentioning, can become a problem. So at first maybe they can go for a little bit and then they realize that they can't pay to go to the class every time. That being said, recently in their area a bunch of, kind of, lower cost gyms have been opening up, and I've noticed a bit of a difference in some of my clients, who previously couldn't afford

to go to the gym, are now going to those like, you know, 10 dollars a month kind of gyms, and it's making a big difference in their activity levels.

In some circumstances providers identified their role as more than just being aware of the resources available, but as actively engaging with the patient in trying to address their barriers. Providers expressed a desire for resources that helped inform them how to do this, and also identified some examples of what they were already doing. Some providers saw it as within their scope to educate patients on gym locations and access, and in one case, appeared to have worked with a patient to facilitate their gym membership discount over a series of months.

MD2: And a lot of them are new to the country so they don't even have an idea where the gym is. So for them, you know, you have to show, ok we actually have gyms here, you can go, there's a membership fee you have to pay, so forth. So it's a full spectrum of people here

MD3: Accessibility to a gym is a huge barrier for some clients I have. People who have some physical disability might benefit from going to the gym because they can use different machines depending on their physical barrier. Not everyone can go to the park and run or walk. So, joining a gym is not financially possible for most of our clients, and there are no resources in the community available for these people. I have a client who...had bariatric surgery July 2015, she lost, with physical activity, diet, surgery, she lost about 80 pounds, and she stalled. Now she's depressed. The last 3 months she did not lose anything at all, she's, she's depressed. It took us more than 3 months to get some discount from Variety Village. Look how much we spent on this woman with surgery, and involving all these teams, and not having physical activity that cost \$20.

There was also a belief that addressing these barriers required initiatives well outside of the traditional health system structure. Both focus groups identified an interest in structured external programs such as subsidized or free programs, or child care, which would help their patients engage in activity. This suggests that when discussing the resources they need to improve patient physical activity, providers are considering not only what information they can give, or what

they can do as providers within their clinical encounters, but also what effect other institutions in society have on their ability to counsel patients on health behaviours.

MD5: And child care, having child care...available for people so that they could go.

Nurse2: Yeah, and like, when, when, cause I personally had experienced, so registration started at 7 o'clock, by 7:15 everything is gone, especially for those centres that are free.

NP response: It's the most horrible system, I'm telling you

....

Nurse2: I wish that, because there is a move, I, I heard that there is a move that everything will be free, in time. I hope it will come sooner than later.

NP5; free?

Nurse2: Cause it's really helpful. There is a move that it will be free for everybody.

NP5: Tax, a tax, yeah that would be good

Social factors in patients' lives not only affected patients' ability to engage in physical activity, but also the provision of physical activity counseling itself. Providers were aware that in some patient contexts physical activity may not be a priority for their patients.

MD2: I don't really know. It's, if, I mean, if they have a mental health issue, perhaps. I see a lot of clients with, for example, for back pain. So this simply, you know, they're either in a, in a, like with a walker or a cane or the crutches, so for them, you know, it would be really hard even to get to see me. So you have to get transportation for them. So, even things as getting their meals, you have to get meals on wheels for them. So, so these, so exercise is really not, not part of the daily routine because they have other things to worry about.

Nurse3: They're more worried about getting to work, getting their kids fed, getting some sleep...not taking a walk around the block

It was challenging to provide counseling to patients in these complex situations, as there was limited time and resources, and many competing health priorities for a visit.

MD2: So it's, it's like a, a multiplanar problem, essentially process, but I don't have a lot of time, sort of, to spend on just exercise counseling with each patient, because, you know, when it comes to their, you know, blood pressure control, and their diabetes and their cholesterol and their mental health, and their, you know, housing and their social assistance, exercise is, although important, it's pretty, you know, it's....at the end of the day it's not as important as other things for them

For some providers, the knowledge of the challenges their patients were facing, and the fact that they perceived physical activity would not be their patients' priority, made it difficult to even give the counseling.

MD2: I found that I see a lot of refugees and young, young families. So women who are having babies, having lots of young children, and so these women are so busy, like they're so tired, (laughter), and, and then I tell them to exercise. And I totally understand why they're tired, and (unintelligible), it's really hard to do that. But, yeah, so I think that's one of the kind of a unique barrier in that they, you know, they they're here in a new place. A lot of times refugees with, you know, 3 under the age of 4 and trying to figure out how to do life in general, and then I'm trying to also give them this idea of doing exercise. And their job is 24 hours a day and their, they have a lot of responsibilities in the home of cooking, cleaning and doing a lot of other things, too so, it's really difficult to give that advice.

NP7: So, I mean, that actually changed my approach in terms of, ok, before I start doing my spiel, I should get a good history about... what's, where's this client actually coming from right? So I actually do that right now, because it's not about me telling them how, what they should be doing, it's like what can they do? Right? Are they in a situation, where for most of them, who's going three times a week to get meals on wheels, I'm talking about insulin therapy. Right? So

3.4 Disciplines responsible for physical activity counseling

Theme summary

Though providers did agree that a patient's primary care provider was ultimately responsible for ensuring that their patient had received counseling, there was a lack of consensus of who was responsible for giving counseling. Both nurse practitioners and physicians considered physical activity counseling a routine component of their practice, but there was considerable difference in perspective on the role of other health professionals, including nurses. Physicians reported that counseling was shared among a range of disciplines, while nurses perceived that it was exclusively the purview of physicians and nurse practitioners. In general, nurses did not consider it a current part of their practice, despite feeling that it related well to their pre-existing roles. Several factors were identified that could have limited nurse's involvement in physical activity counseling so far, including structural and time constraints, challenges in independently defining role scope and acceptance of physical activity counseling as part of their practice. Lack of training in particular was considered a significant barrier for nurses, while physicians felt more comfortable incorporating new practices into their role without training.

Who was responsible for participating in physical activity counseling?

There were some significant differences between provider disciplines in their understanding of who should be responsible for providing counseling. Overall, all providers felt that a patient's primary care provider (a nurse identified providers as being nurse practitioners or physicians), was ultimately responsible for ensuring counseling had been given.

MD4: I do agree with -- it's a shared responsibility at the end of the day, but just take it a step further, the most responsible person on the team for the client would be their primary care provider. Now not everyone we all see is there, are we their primary care provider, right? Cause we do coverage, so sometimes you're seeing someone else's client, etc, etc. So you still are responsible to bring it up in the right context, but at the end of the day I think it's their primary care provider, whoever that may be.

Generally, nurse practitioners and physicians described their roles similarly, and both considered physical activity counseling a routine component of care.

NP5: Anyway, I think physical activity is like probably daily, I discuss physical activity with my clients.

MD1: I find there are some individuals, because of their other comorbidity, existing conditions, I speak to them regularly, almost at every visit about exercise, because I'm really trying to make a huge impact on their health status

Where there was a particular difference in perspective was between physicians and nurses on who should be providing counseling. Nurses seemed to feel that primary care providers were exclusively responsible for giving the counseling themselves, while physicians more often perceived giving counseling as a shared responsibility, and that their role was more overseeing that the counseling had occurred. Physicians also noted that other providers, such as diabetes educators, may be better equipped, or have more time to provide the counseling, than physicians. Interestingly, one physician also mentioned that it was an area in which they hoped to see nursing involvement.

MD4: I do agree with -- it's a shared responsibility at the end of the day, but just take it a step further, the most responsible person on the team for the client would be their primary care provider

MD4: Well I think the best example is what --'s given, the diabetic educators do a lot of it. You know, it's one of the areas that we are hoping to see the RNs role expand, to do some of that counseling. But it hasn't taken fruition here yet.

MD2: Well, I think it's a shared responsibility, I mean, to some degree. I may mention it, and I may, sort of, provide brief counseling, but I think, the diabetic team will be there as a reinforcement. They will be able to, sort of, reiterate the idea, and sort of, explain it, because it's much more focussed, people know that, you know, you know, they usually have diabetes because they're overweight or it's metabolic, and exercise is part of that self-change. So they're there for very specific, you know, they're there

to check their weight, make sure they are checking their sugars, make sure they are exercising and eating right

Counseling was not a part of nursing practice

The perception in the physician group that physical activity counseling could be shared among providers, including nurses, suggested quite a deep divide in the understanding of the current scope of practice between physicians and nurses, as nurses did not feel that was something in their scope, or encouraged by the way their time and encounters were structured.

In general, nurses did not identify physical activity counseling as a component of their practice. However, they did see it as directly related to other aspects of care they were already involved in, such as health promotion and preventative care.

Nurse1: it's ah, I guess it's part of the preventative health care, for me, um so uh (pause), I don't think it's widely used in nursing, to be honest with you. If any, if it's used at all

Nurses discussed physical activity counseling as a practice that would be potentially applicable to their role, but that they did not yet do. There were a few possibilities why nurses might have felt unable to engage in physical activity counseling, despite feeling it was relevant to their practice. There was some suggestion that nurses were open to physical activity, but they had not yet been able to do it because of barriers. This explanation was felt to be supported as nurses spoke in terms of having their scope dictated to them by not having “opportunity” or “chance” (see Table 6) for participation, and in one case directly stated that they felt counseling should be something they could do.

Nurse3: Um, and, kind of, similar to what these girls have said, it's not something we've had the opportunity to do, over here

Nurse2: and I've never had any chance of being involved or being a participant of this kind of, um, program

Nurse3: I think it should be, but isn't, basically

Additionally, though nurse practitioners generally commented less during the discussion of who was responsible for physical activity counseling, when one nurse practitioner suggested (similar to the perspective of physicians), that it should be a shared role, and specifically included nurses, a nurse subsequently referenced that comment as the ideal, though framed it as a “fantasy” suggesting it was not perceived as attainable in their current practice environment.

NP7: I think it's just not only nurses or nurse practitioners, I think every discipline...needs to kind of bring that, even social workers, it's a very good opportunity. Just when they're dealing with patients who come with, like, so much stress and emotional, just even taking a walk and just doing a little bit of physical activity, just even take a walk a few times a week, will help them with their emotions and their stress, and at the same time, fulfill the purpose of being physically active, right?

Later in conversation:

Nurse3: Um, and I think in a fantasy world it's like NP7 was saying, everyone should have their toes in that pond.

Why might nurses not be able to engage in physical activity counseling?

Several different factors were identified that could help determine how the scope of nursing practice was defined. The first was structural constraints, such as time and scheduling. Nurses had limited time with patients, and spent that time in more task-based care. One participant did note that despite the fact that they had previously identified it was not a routine part of their practice, they had tried to counsel patients, but felt limited due to time. This suggested that even if nurses did try to expand their role to include physical activity counseling, they may encounter barriers that would reinforce to them that counseling was not something they could do.

Nurse2: Yeah, we did try sometimes, if we have the time...to integrate physical activity counseling to our clients, but with limited time to see clients, prior to seeing the providers, then that's the hindrance to what we are supposed to be doing to

Secondly, there was also acknowledgement that even if nurses perceive counseling to dovetail well with other parts of their scope of practice, to actually engage in counseling themselves would require a shift in how they perceived their role to be defined. Nurses, would have to “accept” counseling as part of their role.

Nurse3: And acceptance of that as part of our role, too, right? Like.

Further, it was unclear the extent to which nurses were able to independently define their practice scope, as opposed to having it defined by boundary negotiations with other disciplines. One factor participants identified was that patients do not book appointment with nurses, only with nurse practitioners and physicians, and that the nurse visit is a precursor to those. That not only constrains nurses’ time, but also could give an impression to both the interdisciplinary health team and patients about where the focus for treatment and management will be.

Nurse3: I think any of the providers that actually get a booked appointment with a client...has more of that opportunity than the nurses.

In negotiating the boundaries of scope of practice, this division in role was to some extent reinforced in the focus group as with both nurses and nurse practitioners in attendance, the differences in discipline scope and ability to engage in counseling, was made more apparent. It was not only that nurses identified counseling as not yet being part of their scope, while for nurse practitioners it was an accepted part of their role, but this division in scope was generally reinforced by previous experiences of not doing counseling in other nursing contexts unless they were specialised diabetes educators, or working with other disciplines. There was also the perception that the division of roles of who provides counseling was fixed, and has not changed with time.

Nurse1: Ok, um, in my experience in care, in primary care, and um, not only in primary care but also in home care, I did a home care nurse as well. Physical activity counseling is not a part of the role. So, at least, over here.

Researcher: Ok, um, and do you find that that’s changed over time, in terms of who’s involved? Or has it stayed pretty much the same?

Nurse6: I think it stays pretty much the same.

Finally, one of the fundamental ways in which disciplines differed in how they related to counseling as a component of their scope of practice was in the importance they gave to training. In general, most providers felt they had not received much training in physical activity counseling, aside from one physician and one nurse practitioner. This lack of training was cited by nurses as a major barrier to their ability to engage in physical activity counseling.

Nurse1: So, so, like, if you do it properly, you should receive a training. It's not just saying, "oh, you should walk".

Nurse2: I think training is the priority...

In contrast, physicians appeared more comfortable incorporating a practice without specific training in that area. Unlike nurses, physicians appeared to perceive that they had some autonomy in defining their own scope, and including new practices independently. They also noted that this was consistent with the expectations of their scope of practice more generally, and that it was accepted that they were expected to go beyond the specifics of their training to adapt and incorporate new skills.

MD1: I think, there's, but not that physical exercise counseling is one of many areas of medicine that we find that same occurrence, so it's almost expected that your training is more in some of the more complicated issues, and that you are expected to understand this and do this, but not a lot is, of training actually occurs for it. And that you are expected to find your way through.

MD4: But there was very little training on how to counsel, how to counsel, period. And then how to counsel specific to physical activity. So I think most of what I have done now, it's stuff I've learned on my own. So, I try to adapt, you know, you know, techniques that we've used in other areas like smoking cessation, addictions counseling, etc, etc. We've tried to adapt that. But I don't think I've received any direct training in physical activity counseling.

Chapter 4

4 Discussion

The above findings indicate that though providers in this study found physical activity to be a relevant health issue, and counseling for it an accepted component of primary care, the actual practice of physical activity counseling faced several challenges. Providers identified gaps in guidance on how to provide specific advice for patients' particular circumstances, and in terms of resources to help them address the barriers to physical activity patients experience outside of clinic. Additionally, challenges in the inclusion of physical activity counseling in practice were noted to vary by discipline. Physicians in particular seemed to see physical activity counseling as a shared responsibility, while nurses were more likely to see counseling as the sole purview of nurse practitioners and physicians. Further, both nurse practitioner and physicians felt it was a routine component of their practice, while nurses felt it was not.

4.1 Review of findings

This study of primary care provider's perspectives on physical activity counseling, found that providers often viewed physical activity as a health issue, though they also noted that physical activity was affected by a range of factors in patients' lives. It was noted that the presentation of physical activity as a health issue could sometimes result in a gap between what physical activity meant to providers in the context of physical activity counseling, and the beliefs about physical activity patients were perceived to hold.

Providers were generally in agreement on the importance of physical activity as a component of health, and accepted physical activity counseling as a routine component of primary care.

Physical activity counseling was accepted even among providers who did not participate in counseling - indeed there was only one instance where a nurse participant questioned whether, and to what extent, counseling should be part of the primary care scope. This acceptance of physical activity counseling as an appropriate practice was particularly notable given the lack of consensus on whether their efforts in effecting patient behaviour change were generally successful. Providers' continuing efforts to motivate patients to participate in physical activity

could suggest the value they placed on physical activity as a means to improve patient's health outcomes. This perception of the value of physical activity counseling was somewhat unexpected, not only because of providers reported inconsistent experiences with being able to motivate patients to engage in activity change, but because providers were not always clear on the extent to which improvements in patients' physical activity could fundamentally alter their health outcomes.

Though physical activity counseling was largely accepted as a component of primary care, it was not without challenges. Providers identified gaps between the known evidence to inform their practice, and the actual provision of physical activity counseling, expressing a desire for more detailed guidance on the structure and types of activities, particularly for specific medical conditions. They also discussed the challenges of providing counseling in the face of barriers patients may experience in their daily lives. There was a sense that physical activity counseling required providers to engage with and identify these barriers in order to be effective. How far providers viewed their role to extend in addressing the barriers patients faced varied. Different degrees of engagement were noted, including focusing on the identification of barriers, actively assisting patients to overcome barriers through referral to other providers or community resources, and direct advocacy on patients' behalf. Providers also expressed a need for further resources and supports to help them mitigate the barriers patients face. This interest in supports, including those outside the medical setting, is particularly important as it suggests that providers are considering not only what information they can give, or what they can do as providers within their clinical encounters, but also the effect other societal programs such as daycare and taxation have on their ability to counsel patients on health behaviours. They also noted that in some cases, their knowledge of the barriers patients faced made the provision of physical activity counseling more difficult as they recognized that physical activity may not be a patient priority, and the barriers patients faced could make it hard for patients to act on their advice.

It is important to note that despite the general acceptance of physical activity as relevant for health outcomes, different disciplines faced different challenges in their ability to engage in physical activity counseling. Both physicians and nurse practitioners felt it was a routine component of their practice, while nurses did not. Though all disciplines agreed the physician or nurse practitioner responsible for a particular patient was ultimately responsible for ensuring

counseling had been given, there were some differences in perspective on who was responsible for the actual provision of counseling, particularly between physicians and nurses. Physicians were more likely to consider it a shared responsibility, while nurses saw it as exclusively the practice of physicians and nurse practitioners. Nurses identified that though they felt it was related to other aspects of their practice, they did not feel they had the opportunity to participate in counseling. There were several possible explanations for why this was the case, including structural constraints like time, organizational differences in how provider roles with patients were shaped in terms of the booking of appointments, the sense that the division between disciplines in engagement in physical activity counseling was clear and fixed over time, the requirement of adequate training before engaging in counseling, and the need to accept counseling as a routine component of their scope of practice. Particularly, nurses identified a need for specific training before engaging with new skills, while physicians were more comfortable integrating practices outside of their training. It is possible that this difference in autonomy to include new skills learned in practice, and to define the scope of practice beyond the limitations of specific training might contribute to why nurses perceived they were unable to include counseling in their role, while physicians could.

4.2 Implications

This study helps shed light on the way physical activity is understood by providers in this setting, and the challenges they face. This study demonstrates the extent to which providers accept physical activity as a relevant medical issue, and physical activity counseling as a component of primary care, even when they may not perceive their counseling to be effective. Despite this acceptance, the practice of physical activity counseling was not without its challenges. Providers in this study identified areas where they have a need for further resources to allow them to translate evidence-based recommendations into tailored patient-centered advice. Additionally, this study has implications for how social barriers to physical activity are currently being addressed, by highlighting the challenges providers face in mitigating patient barriers, their need for further supports, and how counseling in the absence of those supports could affect patient-provider communication and priority setting. Finally, this study demonstrates how the challenges providers in this setting face when adapting to the inclusion of physical activity counseling differ

by discipline, and how nurses in particular could require discipline-specific supports and training in order to engage with new practices.

4.2.1 Physical activity counseling as part of primary care practice

Despite the challenges identified by providers in this study, physical activity was generally accepted as a medical issue, and counseling for it was seen as a routine component of primary care. The perception of providers that physical activity was a medical concept is consistent with the rhetoric used for behaviours considered health risks in general. In the literature, behaviours are increasingly described in relation to health, and interventions to alter behaviours are recommended in health care settings, and are framed based on the aim of improving health outcomes (Armstrong, 2009; Goldstein, Whitlock, & DePue, 2004; Rollnick et al., 2005). There has been some discussion that part of the process of legitimization for a new practice relates to the discourse around that practice (Goodrick & Reay, 2010). Therefore, the description of physical activity as a medical issue would make sense in the context of providers who regularly practice physical activity counseling, as the reinforcement of physical activity as a medical issue lends support to the inclusion of counseling in their practices.

Despite physical activity counseling being a comparatively new practice (Armstrong, 2009), providers in this study were generally in agreement on the inclusion of physical activity counseling in primary care practice. It is understandable that providers in this study would perceive physical activity as a relevant medical issue they needed to address in practice, given the consistent relationship between physical inactivity and poor health (see introduction) and the fact that only approximately 1 in 10 children and 2 in 10 adults in Canada meet physical activity recommendations (Statistics Canada, n.d.). That counseling on physical activity could be a routine component of practice is also consistent with literature suggesting that patients have a high degree of trust in their physicians (Hall et al., 2001), and that patients view their family physicians as their most trusted source of physical activity information (Schofield et al., 2005). This acceptance of physical activity counseling is also supported by previous work which suggested primary care providers consider healthy lifestyle interventions to be a component of routine primary health care (Kardakis et al., 2013).

It is also not surprising that physicians in this study identified the practice of physical activity counseling as something for which they may not have been specifically trained, but which they engaged with by iteratively trialing approaches with patients and then following up on their efficacy at subsequent visits. This is consistent with a previously cited mechanism by which new practices can come to be seen as legitimate through providers micro-level experiences (Reay, Golden-biddle, Germann, Reay, & Golden-biddle, 2006). When providers take opportunities to trial a new practice change, and perceive a benefit that suggests that practice to be of value, that contributes to the legitimacy of a new practice (Reay et al., 2006).

Providers in this study were less consistent with the previous literature when it came to the relationship between the perceived efficacy of their counseling, and their acceptance of counseling as a routine practice. Previous studies suggest lack of confidence in the efficacy of counseling can be a barrier for providers (Bock et al., 2012; Hébert et al., 2012; Vuori et al., 2013), however providers in this study cited continuing to give physical activity counseling, even when the efficacy of that counseling was unclear. The continued use of a practice despite a lack of confidence in its impact has also been seen in other forms of behaviour management in primary care, as physicians have reported to believe in the potential benefits of smoking cessation counseling, even when they are not confident it is effective (Champassak et al., 2014).

Though the data from this study do not provide an answer as to why perceptions of efficacy might have been less important to the practice of physical activity counseling in this setting, there are several possible explanations. For example, provider's perception of the centrality of physical activity to health and concern over the growing burden of metabolic illness might make them more open to trying any new practice with the potential to make a difference. Further, the known overall low rates of physical activity participation (see above), may mean providers have different expectations of what levels of activity patients are realistically already engaging in, as opposed to the levels recommended in guidelines, which might alter their expectations of patient physical activity improvement. Alternatively, providers might have different standards for efficacy in the context of counseling practices, which require greater patient behaviour change than other treatments like medications, and so may perceive smaller gains in health as evidence of effectiveness. Regardless of the explanation, the fact that physical activity counseling was

frequently practiced, despite a lack of clarity over its effectiveness, suggests the extent to which physical activity counseling had been accepted and legitimized by providers in this study.

4.2.2 Gaps between guidelines and practice

Though physical activity counseling was accepted as a routine component of practice, providers identified considerable challenges in their counseling practices. Providers in this study identified a desire for clearer guidance on recommendations for patients with particular comorbidities, and resources to help them address potential barriers patients may experience.

Guidelines tend to be disease specific, with particular recommendations for activity as a component of treatment and prevention of specific conditions (Leung et al., 2017; Moe et al., 2014; Sigal et al., 2013). There is also a growing body of work that notes that guidelines often do not account for the medical complexity of patients seen by primary care providers, with limited guidance on how to make recommendations individualized to patients in the context of concurrent comorbidities (Fortin et al., 2005; Grudniewicz et al., 2016). The more general guidelines are those for overall physical activity, which recommend targets for activity depending on age group, usually recommended as a duration of time of a certain intensity of activity (Canadian Society for Exercise Physiology, 2012; Lipnowski & LeBlanc, 2012; World Health Organization, 2010). The challenge of these intensity-duration recommendations is that they may not have meaning for patients who might be unclear on the types of activities that would satisfy these criteria, and how best to incorporate them into their daily lives. In this study, providers expressed an interest in more specific information to allow them to tailor the general advice to individual patient circumstances. This points to a disconnect between the evidence, where the benefits of physical activity have been studied as a particular target of aerobic activity weekly, and practice, where providers need to take that concept of aerobic activity and communicate it to a range of patients with different health and social needs as an individualized activity plan. The findings of this study suggest that these primary care providers would benefit from some detailed information of the range of activities that would meet the guideline recommendations, and which activities may be more accessible to those with particular health barriers such as arthritis or mental health concerns.

4.2.3 The management of social barriers to health in practice

Another challenge providers identified in their practice of physical activity counseling was in how to navigate the many social barriers to physical activity that their patients faced. Providers in this study articulated that they felt that an important component of physical activity counseling was the identification of barriers to healthy behaviours that patients experienced outside clinic. Provider's engagement with the barriers patients face, and the explicit request of providers in this study for further supports or tools to help them mitigate patient barriers, points to a growing area of need in primary care. In this study, multiple aspects of patients' social circumstances were identified that would influence providers' ability to provide counseling, or patients' ability to engage in physical activity, including financial barriers, cultural or language barriers, and competing priorities. This is consistent with previous research, as the fact that the broader context of patients' lives is relevant to primary care, and specifically to patients' ability to engage in self-care practices like physical activity and weight loss, is well established (see intro and Bolen et al., 2016; Haughton McNeill, Kreuter, & Subramanian, 2006; Woodruff et al., 2016).

Once acknowledged, how providers should best address patient barriers remains unclear, as several structural features of primary care may make interventions for external barriers more challenging. It is important to note that many of the barriers providers identified for their patients, such as financial and access barriers, are complex and may be difficult for providers to address in clinical encounters. Providers in this study identified that they had received little training in how to engage with counseling in practice. Only one physician identified as receiving formal training in physical activity counseling, and the training experiences identified by nurse practitioners were only received because of prior work in different specialised roles, such as in diabetes education or public health. Additionally, it has been suggested that interventions to promote patient health are not the purview of primary care alone but are best done as a collaboration between community, health care and policy stakeholders. A review of community based health promotion strategies showed that they tend to be multi-faceted, with informational, behavioural, social, policy and environmental approaches (Heath et al., 2012)⁷.

⁷ This review examined international physical activity interventions over an 11 year period in the literature, with a focus on efficacy. A range of approaches were suggested including community-wide educational campaigns, school

Consistent with this, one critique of behaviour counseling in practice is that societal influences play a greater role than physician advice, and so it may be more appropriate for physicians to refer to external behaviour change supports rather than to manage behaviour change themselves (Campos-Outcalt & Calonge, 2012). However, these other structural supports may not always be available to patients, and if available, there is no formal connection between external community programs and primary care to help inform providers of which external resources exist for patients to use. Individual primary care providers are comparatively isolated from the community within the confines of the health system, and so even if they recognize a patient has a need for an external support they may lack the connections to, or even a mechanism through which to become aware of, existing community resources. One approach has been social prescribing, where providers refer to external programs outside the primary care clinic (Husk et al., 2016). However, even within this model, it has been argued that patients must still be successfully transferred from the health sector to these external programs (Husk et al., 2016), in some cases requiring a “link” worker (Torjesen, 2016). This lack of connection to outside resources for physical activity has been a concern for other specialties as well, as oncologists have also noted a lack of knowledge of community-based programs when giving physical activity counseling (Fong, Faulkner, Jones, & Sabiston, 2018).

The division between the health sector and community based programs is not unique to physical activity counseling. One study of different countries found only 42-65% of primary care doctors reported that their practices frequently coordinated with a broader range of social services, and at one extreme 70% or more of physicians in Australia and the UK reported that it was somewhat or very difficult to do so (Osborn et al., 2015). This is consistent with previous work looking at the management of social factors in practice which found referral to community programs can be low (Gulbrandsen et al., 1998), and when used, the range of services to which providers refer is narrow (Popay et al., 2007). It is important to note provider’s lack of structural supports in

and work based behavioural and social supports, and environmental and planning policies. What is notable, is that this suggests primary care counseling is only a small component of a broad range of interventions that are needed in order to effectively change behaviours. Indeed, this review stated there was insufficient evidence to support provider-based counseling as an individual intervention, but that it is promising when integrated into community efforts. The fact that providers in this study identified a need for more knowledge of the resources available to help them address patient barriers suggests that more formal connections between primary care and these broader initiatives remain needed (Heath et al., 2012).

engaging with these issues, as the inclusion of patients' broader barriers to health in primary care is an increasing expectation. For example, one study included providers' ability to incorporate patient social concerns as a component of its definition of quality primary care, noting that excellent care "was demonstrated by integrating care of patients' most salient concerns, as well as their social and work lives, with collaborative management of their multiple health conditions and concerns" (Bolen et al., 2016).

Despite these possible challenges, there is the potential for primary care providers to have a role in addressing patient barriers to health, as primary care providers in this study cited several approaches they used in practice. Providers cited examples where their role extended beyond the identification of patient barriers, to tailoring plans based on patient's social circumstances, and actively engaging with the reduction of these barriers through referrals and connection to external community resources. Many of these strategies are consistent with those detailed in a previous report from the CMA detailing mechanisms by which physicians can address health equity in their practices (Canadian Medical Association, 2013b). However, providers in this study identified that to address patient barriers in a meaningful way they also had a need for supports and services outside of the health sector.

This suggests that if the role of primary care providers is expected to expand to actively assist patients with the other factors influencing their health, then the current structure of primary care practice has not yet adapted to support providers in doing so. Caring for underserved patients often involves trying to address more medical concerns in a visit, and more frequent treatment decisions for patients and providers (Bolen et al., 2016; Fiscella & Epstein, 2008; Grudniewicz et al., 2016). The current billing or remuneration system for primary care providers has been traditionally focussed on aspects of care such as diagnosis and treatment, and so may not incentivize the higher demands of care for complex patients (Fiscella & Epstein, 2008; Safford, Allison, & Kiefe, 2007; Turner & Cuttler, 2011). Though in this study providers were part of a CHC, and therefore salaried, that does not reflect the payment scheme for most family physicians in Ontario, who are more capitation or fee-for-service based (Henry et al., 2012), which may disincentivize longer care visits for more complex patients. Further, scales used to evaluate provider's clinical performance may also penalize providers whose patient outcomes may be affected by complexity, as a study in the US found that primary care physicians ranked higher by

a clinical performance score had fewer minority patients, patients without insurance or Medicaid, and non-English speaking patients (Hong, Atlas, Ashburner, Barry, & Grant, 2010). It is perhaps not surprising then that providers caring for underserved or complex practices tend to experience more stress, job dissatisfaction and burnout (Fiscella & Epstein, 2008; Grant et al., 2011; Grudniewicz et al., 2016; Mercer & Watt, 2007). As primary care is increasingly asked to incorporate counseling on patient lifestyle factors, there is a need for additional resources, training and support for providers to be able to more effectively discuss management options for patients in the context of their broader lives.

There is one final implication that could be drawn from the discussion of participants in this study of their experiences counseling patients who experience barriers to physical activity. This study helps highlight how the possible tension between patient-centered priority setting and the equitable advocacy for healthy behaviours can sometimes play out in the communication between individual providers and patients. At times it was noted that providers' knowledge of the barriers patients faced, and the fact that physical activity may not be a patient priority, made it more difficult for providers to counsel them on physical activity.

This is important to acknowledge, as it points to the challenges providers may face in balancing patient-centered care and equity in encouraging patients at higher risk to change their behaviours. On the one hand it has been argued that providers should incorporate patient context and patient priorities into their decision making and priority-setting (Fraenkel, 2013; Grant et al., 2013; Grudniewicz et al., 2016; Safford et al., 2007; Seehusen, Bowman, & Neale, 2014), and patients' priorities may focus on acute health issues (Arvidsson et al., 2012), rather than the chronic disease, prevention and health behaviour priorities of providers (Bolen et al., 2016). Providers are expected to take patient priorities into account and prior work has also suggested that one of the risks of behaviour counseling is the potential negative impact on the provider-patient relationship of repeatedly counseling patients on unhealthy patient behaviours (McPhail & Schippers, 2012; Schlaff, 2013).

On the other hand, benefits from physical activity counseling interventions in underserved populations have been seen (Jennifer K. Carroll et al., 2016; Hardcastle et al., 2012; Lowther et al., 2002), and evidence on the relationship between physical activity and health outcomes

suggest that the greatest health benefit is from small changes in those most sedentary, or at risk (Warburton et al., 2010). Additionally, it has been suggested that there is a tendency for people in higher socioeconomic conditions to be the first to benefit from population health interventions (DG Manuel, Creator, Rosella, & Henry, 2009), which has led to calls for primary care providers to promote healthy behaviours either equally, or even more strongly, to their most deprived patients to address health inequities (Thebault et al., 2017).

In this study providers identified that in some cases their knowledge of patient circumstances, the barriers patients face, and the fact that physical activity counseling may not align with patient priorities and context, may make counseling difficult to give. Providers in this study did articulate a desire for resources to help them address patient barriers, and so it is possible that if providers perceived they had the supports to more effectively mitigate patient barriers they would be more confident in presenting physical activity as attainable for their more vulnerable patients. However, how to support providers to bridge between the provision of quality equitable health behaviour counseling, and doing so in the context of patient priorities, is an area that should be explored further.

4.2.4 Who should be providing counseling?

The final challenge of physical activity counseling that providers in this study identified, was in the differences among disciplines in their ability to incorporate physical activity counseling into their practices. In this study nurse practitioners described their roles similarly to physicians, and considered physical activity counseling as a routine component of their practice. This is consistent with prior work which has supported the inclusion of physical activity counseling in nurse practitioners' practice (Grimstvedt et al., 2012), including in Canada (Lamarche & Vallance, 2013).

Where there were differences in perspective was in who was perceived to be responsible for engaging with physical activity counseling in practice. Physicians in particular were more likely to perceive physical activity counseling as a shared responsibility, and one physician even cited an interest in nursing involvement, while nurses felt it was only part of the role of physicians and nurse practitioners. Nurses felt physical activity counseling was not part of their role, and that responsibility for provision of counseling was not perceived to change. That physicians report

viewing physical activity counseling as a shared responsibility is not unique to this study, and has been seen in prior work examining primary care physicians perspectives on physical activity counseling practices (Persson et al., 2013b).

What is less clear in the literature is the extent to which nurses include physical activity counseling in their practice. There is variation globally in the extent of involvement of nurses, with areas where physical activity counseling is a routine component of nursing practice, such as in the United Kingdom (Bakhshi, Sun, Murrells, & While, 2015), areas where nurses are involved, but less often than other disciplines like physicians, such as in Brazil (Florindo et al., 2013), and areas where health promotion by nurses may occur infrequently, as in an Irish study (Casey, 2007). Despite the fact that nurses may not always be engaging in physical activity counseling, physical activity promotion has been argued to be a component of nursing practice in the American Journal of Nursing (Richards, 2015), and a Nursing Action Guide to assist in physical activity assessment has been developed (Exercise is Medicine in partnership with the Preventative Cardiovascular Nurses Association, n.d.).

The fact that nurses in this study context did not engage in counseling, despite identifying physical activity as important to health, and related to other components of their scope of practice, could be partially explained by studies that have found that despite enthusiasm for a practice, and language legitimizing a practice, action in terms of practice change may not always occur (Reay et al., 2013). This study raises several possibilities of why nurses may have not yet been able to engage in counseling, though it is not able to definitively resolve this question. As nurses have not yet engaged in counseling, they have not been able to experience the “under-the-radar” activities where exposure to a practice may in some cases contribute to its legitimacy (Reay et al., 2006). Further, change in role identity and scope is not easy or rapid (Goodrick & Reay, 2010). Another possibility is that due to the complex ways in which practice boundaries are defined and maintained between disciplines, nurses may not have perceived they had the autonomy to include a new practice. It has been previously suggested that boundaries between disciplines can slow the spread of new innovations, and that those boundaries are formal and entrenched (Ferlie et al., 2005). It is also suggested that communities of practice tend to seal themselves off from other disciplines, and perceive and engage with evidence in the literature differently (Ferlie et al., 2005). These divisions between communities of practice may explain

why even though the practice of physical activity counseling was being done by other disciplines in this study's clinical context, a nurse participant may not have had the exposure to this practice to see it as attainable or legitimized, which could be one explanation for why nurse participants would voice discomfort with engaging in this practice without specific training.

It is also possible that the navigation of scope of practice boundaries in adopting new innovations may be particularly difficult for nurses. It has been argued that there has been considerable shift in the professional identity of nurses over time (Goodrick & Reay, 2010), and that even where nursing scope of practice may have expanded in theory, that may not always be the case in practice (Déry, D'Amour, Blais, & Clarke, 2015). Some research has examined the difference between trained scope of practice, and the narrower actual "enacted" scope of practice, which could explain why nurses in this study would feel that they are not able to engage in physical activity counseling, even when they acknowledge that it is consistent with their theoretical practice scope (Déry et al., 2015; Oelke et al., 2008). It has been suggested that in practice, the ability of nurses to engage with the full scope of their skills may be limited by structural constraints such as time, competing work demands, and a focus on task-based care, concerns which were similarly echoed here (Déry et al., 2015; Oelke et al., 2008). Additionally, the lack of clarity around the precise scope of practice under which nurses can ethically engage (Déry et al., 2015; Oelke et al., 2008; Pearson, 2003), may cause nurses to feel less comfortable in independently adopting new practices. To try to address this concern there have been several attempts to generate frameworks to help nurses define their scope in practice, and determine whether new practices fit within it (Ballard et al., 2016; Canadian Nurses Association, 2015; Fealy et al., 2015).

Therefore, the inclusion of physical activity counseling in nursing practice in the clinical context studied here, as was suggested by one physician participant, would require an adjustment in the concept of the scope of nursing within the clinic group, as well as specific changes in organizational structure to support counseling as part of nursing practice. Nurses in this study raised concern about significant barriers in terms of their time and access with patients, lack of training, resources and supports in providing counseling, which are similar to barriers found in other studies (Casey, 2007; Jansink, Braspenning, van der Weijden, Elwyn, & Grol, 2010). However, taking the time to collaboratively work with nurses to address these barriers could be

of potentially significant benefit. The Canadian health system is currently facing the challenge of providing primary care to an aging patient population with an increasing burden of chronic conditions. One policy approach to address these new burdens on the health system has been a renewed focus on primary care, and in an international study the majority of primary care physicians in most of the countries studied used nurses or case managers to help monitor and manage care for patient with chronic conditions (Osborn et al., 2015). In the face of decreased physician supply in some areas (Tobler, 2010), there are also economic incentives to the integration of different disciplines into counseling practices, as counseling can take time away from other concerns in physician visits, and it has been argued that the inclusion of nurses in primary care roles traditionally held by physicians could improve quality and reduce costs (Laurant et al., 2005). However, this study suggests that in order to increase the scope of practice of nurses in this context to include physical activity counseling, they must receive the time, training and supports in order to do so effectively.

4.3 Limitations and strengths

There were several limitations to this study. Firstly, it was done in one specific clinic group setting, and as providers were invited to volunteer to participate in the focus groups, there was a risk of volunteer or selection bias (Sackett, 1979), in that those providers that volunteered may have done so due to a particular interest in physical activity counseling, and so may not represent the perspectives of other providers even in the same setting. Therefore, while that clinic group setting was specifically chosen to allow for this study to consider provider's perspectives in a practice setting that may be particularly oriented towards the social determinants of health, it also means the findings reported above are highly contextual to this group of providers in that setting at the time of the study and cannot be generalized to represent the views of other providers. In order to better understand participant's perspectives on physical activity counseling providers were encouraged to discuss physical activity counseling, their practices, and their challenges (see focus group guide). As this required them to speak about their current practices it could be argued there is a risk of recall or report bias, as other studies have shown providers reported recall of their practices when following guidelines may not correspond with what is observed in reality (Adams, Soumerai, Lomas, & Ross-Degnan, 1999). However, as my goal was not to evaluate their practices, or assess the extent to which participants adhered to particular standards

of care, but rather to better understand providers own understandings of their practices, this was felt to be less of a concern.

Finally, focus groups were grouped by provider discipline, which was done to minimize participant stress as they would be among peers, and to allow me to examine any possible differences based on provider discipline. However, it became clear that though part of the same focus group, nurse practitioners had less similarities in their practice perspective with nurses than they did with physicians, a distinction which I did not consider when designing the study. In future an approach where providers are grouped by provider role (for example both nurse practitioners and physicians engaged in physical activity counseling), rather than discipline might be of benefit when studying provider practice perspectives.

Despite these limitations, there are several strengths to this study. It took place in a clinic setting that as a Community Health Centre has a particular interest in social determinants of health, allowing for the study of provider perspectives on their counseling practices in that specific context, which is an area not heavily researched in the literature. Additionally, by explicitly including different provider types this study acknowledged the increasingly multi-disciplinary nature of primary care, and that there may be fundamental differences in perspectives between different types of providers, even within the same setting.

4.4 Future directions

This study highlights a significant need for resources to support providers in giving effective physical activity counseling. Additional guidance on how to tailor recommendations for specific patient contexts should be considered in the development of future guidelines. In particular, future research should consider how to develop physical activity guideline recommendations in a way that accounts for patients with complex health needs, including multiple comorbidities. Providers in this study identified a specific need for guidance for patients whose health may pose a barrier to physical activity engagement such as those with musculoskeletal or mental health conditions.

Additionally, future work should consider how best to support providers in addressing the barriers to physical activity patients face. There is a need to develop mechanisms by which

primary care can better connect to resources, not only in the clinical setting but also by fostering connections between primary care and the broader programs and services needed to address these barriers in a meaningful way. As programs might happen at a local level, or as components of larger initiatives within different policy fields there is also a need to better understand what creates the divisions between providers within the health system and other departments which could be engaging with health policy, and how to reduce them.

Finally, future studies should consider how to promote new practices in primary care in a discipline-specific way. In order to facilitate the inclusion of allied health, such as nursing, in more accessible and sustainable physical activity counseling approaches in primary care, studies need to consider how each discipline navigates the incorporation of new practices, and initiatives to promote physical activity counseling in primary care settings need to do so in a way that is sensitive to the experiences of different disciplines.

4.5 Conclusions

There has been growing interest in physical activity counseling. Though studies on efficacy have shown some mixed results, the suggestion that overall there can be some benefit with an intervention that is a brief addition to a clinical visit, and that small changes in activity for those most at risk could have significant effects in the face of a growing epidemic of chronic conditions, have led to physical activity counseling becoming a recommended part of primary care. Here, primary care providers serving a high needs suburban community noted that though physical activity counseling has been accepted as a routine component of practice, providers face challenges in translating general guidelines into specific recommendations, suggesting a need for guidelines that better reflect the complexity of their practices. Further providers felt they had a role in identifying the barriers patients face outside the clinical setting, but desired further resources in order to address those barriers effectively. As providers are increasingly expected to incorporate both counseling practices and the management of social barriers within their care, this suggests a real need for supports both within and external to the primary care setting to give providers the tools to address the social issues which may arise. Additionally, it was noted that there were some differences among disciplines in who was perceived to be responsible for providing counseling, and that nurses in particular did not feel it is a part of their practice. If

there is a desire to promote the inclusion of nursing and allied health in physical activity counseling then future initiatives should consider how to do so in a discipline-specific manner.

References

- Abelson, J., & Lomas, J. (1990). Do health service organizations and community health centres have higher disease prevention and health promotion levels than fee-for-service practices? *Cmaj*, *142*(6), 575–581.
- Adams, A. S., Soumerai, S. B., Lomas, J., & Ross-Degnan, D. (1999). Evidence of self-report bias in assessing adherence to guidelines. *International Journal for Quality in Health Care*, *11*(3), 187–192. <https://doi.org/10.1093/intqhc/11.3.187>
- Aittasalo, M. (2008a). Physical activity counselling in primary health care. *Scandinavian Journal of Medicine & Science in Sports*, *18*(3), 261–262. <https://doi.org/10.1111/j.1600-0838.2008.00843.x>
- Aittasalo, M. (2008b). Physical activity counselling in primary health care. *Scandinavia Journal of Medicine and Science in Sport*, *18*, 261–262. <https://doi.org/10.1111/j.1600-0838.2008.00843.x>
- Aittasalo, M., Miilunpalo, S., Kukkonen-Harjula, K., & Pasanen, M. (2006). A randomized intervention of physical activity promotion and patient self-monitoring in primary health care. *Preventive Medicine*, *42*(1), 40–46. <https://doi.org/10.1016/j.ypmed.2005.10.003>
- Anderson, T. J., Grégoire, J., Pearson, G. J., Barry, A. R., Couture, P., Dawes, M., ... Ward, R. (2016). 2016 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult. *Canadian Journal of Cardiology*, *32*(11), 1263–1282. <https://doi.org/10.1016/j.cjca.2016.07.510>
- Armstrong, D. (2009). Origins of the problem of health-related behaviours: A genealogical study. *Social Studies of Science*, *39*(6), 909–926. <https://doi.org/10.1177/0306312709104258>
- Arvidsson, E., André, M., Borgquist, L., Andersson, D., & Carlsson, P. (2012). Setting priorities in primary health care - On whose conditions? A questionnaire study. *BMC Family Practice*, *13*. <https://doi.org/10.1186/1471-2296-13-114>
- AuYoung, M., Linke, S. E., Pagoto, S., Buman, M. P., Craft, L. L., Richardson, C. R., ... Sheinfeld Gorin, S. (2016). Integrating Physical Activity in Primary Care Practice. *American Journal of Medicine*, *129*(10), 1022–1029. <https://doi.org/10.1016/j.amjmed.2016.02.008>
- Awofeso, N. (2004). What's New about the "New Public Health"? *American Journal of Public Health*, *94*(5), 705–709.
- Bakhshi, S., Sun, F., Murrells, T., & While, A. (2015). Nurses' health behaviours and physical activity-related health-promotion practices. *British Journal of Community Nursing*, *20*(6), 289–296. <https://doi.org/10.12968/bjcn.2015.20.6.289>
- Ballard, K., Haagenon, D., Christiansen, L., Damgaard, G., Halstead, J. A., Jason, R. R., ... Alexander, M. (2016). Scope of Nursing Practice Decision-Making Framework. *Journal of Nursing Regulation*, *7*(3), 19–21. [https://doi.org/10.1016/S2155-8256\(16\)32316-X](https://doi.org/10.1016/S2155-8256(16)32316-X)
- Batnitzky, A. K. (2011). Cultural constructions of "obesity": Understanding body size, social

- class and gender in Morocco. *Health and Place*, 17(1), 345–352.
<https://doi.org/10.1016/j.healthplace.2010.11.012>
- Bedi, G., Martinez, D., Levin, F. R., Comer, S., & Haney, M. (2017). Addiction as a brain disease does not promote injustice. *Nature Human Behaviour*, 1(9), 610–610.
<https://doi.org/10.1038/s41562-017-0203-5>
- Bell, L., & Duffy, A. (2009). A concept analysis of nurse – patient trust. *British Journal of Nursing*, 18(1), 46–51.
- BMA. (2011). *Social determinants of health - what doctors can do*.
- Bock, C., Diehm, C., & Schneider, S. (2012). Physical activity promotion in primary health care: results from a German physician survey. *The European Journal of General Practice*, 18(2), 86–91. <https://doi.org/10.3109/13814788.2012.675504>
- Bolen, S. D., Sage, P., Perzynski, A. T., & Stange, K. C. (2016). No moment wasted: the primary-care visit for adults with diabetes and low socio-economic status. *Primary Health Care Research & Development*, 17(1), 18–32. <https://doi.org/10.1017/S1463423615000134>
- Bolognesi, M., Nigg, C. R., Massarini, M., & Lippke, S. (2006). Reducing obesity indicators through brief physical activity counseling (pace) in italian primary care settings. *Annals of Behavioral Medicine*, 31(2), 179–185. https://doi.org/10.1207/s15324796abm3102_10
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(May 2015), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Burton, N. W., Turrell, G., & Oldenburg, B. (2003). Participation in Recreational Physical Activity: Why Do Socioeconomic Groups Differ? *Health Education & Behavior*, 30(2), 225–244. <https://doi.org/10.1177/1090198102251036>
- Campos-Outcalt, D., & Calonge, N. (2012). Commentary: Adding realism and perspective to behavioral counseling curricula for medical students. *Academic Medicine*, 87(7), 840–841. <https://doi.org/10.1097/ACM.0b013e3182580f56>
- Canadian Medical Association. (2013a). Health care in Canada: what makes us sick?, (July). Retrieved from http://www.cma.ca/multimedia/CMA/Content_Images/Inside_cma/Advocacy/HCT/What-makes-us-sick_en.pdf
- Canadian Medical Association. (2013b). *Physicians and health equity: opportunities in practice*. Retrieved from <https://www.cma.ca/Assets/assets-library/document/en/advocacy/Health-Equity-Opportunities-in-Practice-Final-e.pdf>
- Canadian Nurses Association. (2015). *Framework for the Practice of Registered Nurses in Canada*. Retrieved from <https://www.cna-aici.ca/~media/cna/page-content/pdf-en/framework-for-the-practice-of-registered-nurses-in-canada.pdf?la=en>
- Canadian Society for Exercise Physiology. (2012). Canadian Physical Activity Guidelines; Canadian Sedentary Behaviour Guidelines., 1–32. Retrieved from www.csep.ca/guidelines
- Carroll, J. K., Antognoli, E., & Flocke, S. a. (2011). Evaluation of physical activity counseling in

primary care using direct observation of the 5As, 416–422.
<https://doi.org/10.1370/afm.1299>.INTRODUCTION

- Carroll, J. K., Fiscella, K., Meldrum, S. C., Williams, G. C., Sciamanna, C. N., Jean-Pierre, P., ... Epstein, R. M. (2008). Clinician-Patient Communication About Physical Activity in an Underserved Population. *The Journal of the American Board of Family Medicine*, 21(2), 118–127. <https://doi.org/10.3122/jabfm.2008.02.070117>
- Carroll, J. K., Flocke, S. A., Sanders, M. R., Lowenstein, L., Fiscella, K., & Epstein, R. M. (2016). Effectiveness of a clinician intervention to improve physical activity discussions in underserved adults. *Family Practice*, 33(5), 488–491.
<https://doi.org/10.1093/fampra/cmw036>
- Casey, D. (2007). Nurses' perceptions, understanding and experiences of health promotion. *Journal of Clinical Nursing*, 16(6), 1039–1049. <https://doi.org/10.1111/j.1365-2702.2007.01640.x>
- CCFP, & CNA. (2011). *Physical Activity*. Retrieved from http://www.cfpc.ca/uploadedFiles/Resources/Resource_Items/Health_Professionals/Joint_Position_Statement_Physical_Activity_2011.pdf
- Chamberlain, B. (2009). Phenomenology : A Qualitative Method. *Clinical Nurse Specialist*, 23(2), 52–53.
- Chambers, R., Chambers, C., & Campbell, I. (2000). Exercise promotion for patients with significant medical problems. *Health Education Journal*, 59(1), 90–98.
<https://doi.org/10.1177/001789690005900108>
- Champassak, S., Goggin, K., Finocchiaro-Kessler, S., Farris, M., Ehtesham, M., Schoor, R., & Catley, D. (2014). A qualitative assessment of provider perspectives on smoking cessation counseling. *J Eval Clin Pract*, 20(3), 281–287. <https://doi.org/10.1111/jep.12124>.A
- Chang, V. W., & Christakis, N. A. (2002). Medical modelling of obesity: a transition from action to experience in a 20th century American medical textbook. *Sociology of Health and Illness*, 24(2), 151–177.
- Chinn, D. J., White, M., Harland, J., Drinkwater, C., & Raybould, S. (1999). Barriers to physical activity and socioeconomic position: implications for health promotion. *Journal of Epidemiology and Community Health*, 53, 191–192. <https://doi.org/10.1136/jech.53.3.191>
- Choiniere, R., Lafontaine, P., & Edwards, A. (2000). Distribution of cardiovascular disease risk factors by socioeconomic status among Canadian adults. *Cmaj*, 162(9S), S13–S24.
- Coalition for Active Living. (2010). *Pan-Canadian Physical Activity Strategy*. Retrieved from http://www.cfpc.ca/uploadedFiles/Resources/Resource_Items/Health_Professionals/Physical_Activity.pdf
- Collins, P. A., Resendes, S. J., & Dunn, J. R. (2014). The untold story: examining Ontario's community health centres; initiatives to address upstream determinants of health. *Healthc Policy*, 10(1), 14–29. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4253893/?tool=pubmed>

- Conrad, P. (1992). Medicalization and Social Control. *Annual Review of Sociology*, 18, 209–232.
- Creswell, J. W., & Miller, D. L. (2000). Determining Validity in Qualitative Inquiry. *Theory Into Practice*, 39(3), 124–130. https://doi.org/10.1207/s15430421tip3903_2
- Crotty, M. (1998). Introduction - The research process. In *The Foundation of Social Research: Meaning and perspective in the research process* (pp. 1–17).
- Crowley, R. A., & Kirschner, N. (2015). The integration of care for mental health, substance abuse, and other behavioral health conditions into primary care: Executive summary of an American college of physicians position paper. *Annals of Internal Medicine*, 163(4), 298–299. <https://doi.org/10.7326/M15-0510>
- Dahrouge, S., Hogg, W., Tuna, M., Russell, G., Devlin, R. A., Tugwell, P., & Kristjansson, E. (2011). Age equity in different models of primary care practice in Ontario. *Canadian Family Physician*, 57, 1300–1309.
- Dahrouge, S., Hoog, W., Russell, G., Tuna, M., Geneau, R., Muldoon, L. K., ... Fletcher, J. (2012). Impact of Remuneration and Organizational Factors on Completing Preventive Manoeuvres in Primary Care Practices. *Cmaj*, 184(2), 135–144. <https://doi.org/10.1503/cmaj.110407>
- Dahrouge, S., Muldoon, L., Ward, N., Hogg, W., Russell, G., & Taylor-Sussex, R. (2014). Roles of nurse practitioners and family physicians in community health centres. *Canadian Family Physician Médecin de Famille Canadien*, 60(11), 1020–7. Retrieved from <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=4229163&tool=pmcentrez&rendertype=abstract>
- Déry, J., D'Amour, D., Blais, R., & Clarke, S. P. (2015). Influences on and Outcomes of Enacted Scope of Nursing Practice: A New Model. *Advances in Nursing Science*, 38(2), 136–143. <https://doi.org/10.1097/ANS.0000000000000071>
- Douglas, F., Torrance, N., van Teijlingen, E., Meloni, S., & Kerr, A. (2006). Primary care staff's views and experiences related to routinely advising patients about physical activity. A questionnaire survey. *BMC Public Health*, 6(1), 138. <https://doi.org/10.1186/1471-2458-6-138>
- Drewes, Y. M., Koenen, J. M., de Ruijter, W., van Dijk-van Dijk, D. A., van der Weele, G. M., Middelkoop, B. J., ... Gussekloo, J. (2012). GPs' perspectives on preventive care for older people: a focus group study. *British Journal of General Practice*, 62(604), 765–772. <https://doi.org/10.3399/bjgp12X658296>
- Droomers, M., Schrijvers, C. T. M., Van De Mheen, H., & Mackenbach, J. P. (1998). Educational differences in leisure-time physical inactivity: A descriptive and explanatory study. *Social Science and Medicine*, 47(11), 1665–1676. [https://doi.org/10.1016/S0277-9536\(98\)00272-X](https://doi.org/10.1016/S0277-9536(98)00272-X)
- Eden, K. B., Orleans, C. T., Mulrow, C. D., Pender, N. J., & Teutsch, S. M. (2002). Clinical Guidelines Does Counseling by Clinicians Improve Physical Activity? A Summary. *Annals of Internal Medicine*, 137(3), 208–215. <https://doi.org/10.7326/0003-4819-137-3-200208060-00015>

- Elley, C. R., Kerse, N., Arroll, B., & Robinson, E. (2003). Effectiveness of counseling patients on physical activity in general practice: cluster randomised controlled trial. *BMJ*, 326(April).
- Exercise is Medicine in partnership with the Preventative Cardiovascular Nurses Association. (n.d.). *Nurses' Action Guide*. Retrieved from http://www.exerciseismedicine.org/assets/page_documents/NursesActionGuide_HQ.pdf
- Fasting, K. (1987). Sports and women's culture. *Women's Studies Int Forum*, 10(4), 361–368.
- Fealy, G. M., Casey, M., Rohde, D., Brady, A.-M., Hegarty, J., Kennedy, C., ... Prizeman, G. (2015). Scope of practice decision making: findings from a national survey of Irish nurses and midwives. *Journal of Clinical Nursing*, 24, 2871–2880. <https://doi.org/10.1111/jocn.12980>
- Ferlie, E., Fitzgerald, L., Wood, M., Hawkins, C., Ferlie, E., & Hawkins, C. (2005). The Nonspread of Innovations : The Mediating Role of Professionals Linked references are available on JSTOR for this article : THE NONSPREAD OF INNOVATIONS : THE MEDIATING ROLE OF PROFESSIONALS Royal Holloway University of London. *The Academy of Management Journal*, 48(1), 117–134.
- Fiscella, K., & Epstein, R. M. (2008). So Much to Do, So Little Time. *Arch Intern Med.*, 168(17), 1843–1852. <https://doi.org/10.1097/TME.0b013e3181bcb571>
- Fischer, C. (1994). Changes in leisure activities, 1890-1940. *Journal of Social History*, 27(3), 453–475.
- Florindo, A. A., Mielke, G. I., Gomes, G. A. de O., Ramos, L. R., Bracco, M. M., Parra, D. C., ... Hallal, P. C. (2013). Physical activity counseling in primary health care in Brazil: a national study on prevalence and associated factors. *BMC Public Health*, 13(1), 794. <https://doi.org/10.1186/1471-2458-13-794>
- Fong, A. J., Faulkner, G., Jones, J. M., & Sabiston, C. M. (2018). A qualitative analysis of oncology clinicians' perceptions and barriers for physical activity counseling in breast cancer survivors. *Supportive Care in Cancer*. <https://doi.org/10.1007/s00520-018-4163-8>
- Fortin, M., Lapointe, L., Hudon, C., & Vanasse, A. (2005). Multimorbidity is common to family practice.pdf, 5, 244–245.
- Fraenkel, L. (2013). Incorporating Patients' Preferences Into Medical Decision Making. *Medical Care Research and Review*, 70(1_suppl), 80S–93S. <https://doi.org/10.1177/1077558712461283>
- Gao, S., Stone, R. A., Hough, L. J., Haibach, J. P., Marcus, B. H., Ciccolo, J. T., ... Sevick, M. A. (2016). Physical activity counseling in overweight and obese primary care patients: Outcomes of the VA-STRIDE randomized controlled trial. *Preventive Medicine Reports*, 3, 113–120. <https://doi.org/10.1016/j.pmedr.2015.12.007>
- Gill, P., Stewart, K., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and focus groups. *British Dental Journal*, 204(6), 291–295. <https://doi.org/10.1038/bdj.2008.192>

- Glazier, R., Zagorski, B., & Rayner, J. (2012). *Comparison of Primary Care Models in Ontario by Demographics, Case mix, and Emergency Department Use, 2008/09 to 2009/10*. Toronto.
- Goldstein, M. G., Pinto, B. M., Marcus, B. H., Lynn, H., Jette, A. M., Rakowski, W., ... Goldstein, M. G. (1999). Physician-based physical activity counseling for middle-aged and older adults: a randomized trial. *Ann Behav Med, 21*(1), 40–47. <https://doi.org/10.1007/BF02895032>
- Goldstein, M. G., Whitlock, E. P., & DePue, J. (2004). Multiple behavioral risk factor interventions in primary care: Summary of research evidence. *American Journal of Preventive Medicine, 27*(SUPPL.), 61–79. <https://doi.org/10.1016/j.amepre.2004.04.023>
- Goodrick, E., & Reay, T. (2010). Florence nightingale endures: Legitimizing a new professional role identity. *Journal of Management Studies, 47*(1), 55–84. <https://doi.org/10.1111/j.1467-6486.2009.00860.x>
- Grandes, G. (2009). Effectiveness of Physical Activity Advice and Prescription by Physicians in Routine Primary Care: A Cluster Randomized Trial. *Archives of Internal Medicine, 169*(7), 694. <https://doi.org/10.1001/archinternmed.2009.23>
- Grant, R. W., Adams, A. S., Bayliss, E. A., Heisler, M., Permanente, K., California, N., ... States, U. (2013). Establishing visit priorities for complex patients: A summary of the literature and conceptual model to guide innovative interventions. *Healthc (Amst), 1*(3–4), 117–122. <https://doi.org/10.1016/j.hjdsi.2013.07.008>. Establishing
- Grant, R. W., Ashburner, J. M., Hong, C. C., Chang, Y., Barry, M. J., & Atlas, S. J. (2011). Defining Patient Complexity From the Primary Care Physician’s Perspective A Cohort Study. *Annals of Internal Medicine, 155*(12), 797–804. <https://doi.org/10.1059/0003-4819-155-12-201112200-00001>
- Grimstvedt, M. E., Der Ananian, C., Keller, C., Woolf, K., Sebren, A., & Ainsworth, B. (2012). Nurse practitioner and physician assistant physical activity counseling knowledge, confidence and practices. *Preventive Medicine, 54*(5), 306–308. <https://doi.org/10.1016/j.ypmed.2012.02.003>
- Grudniewicz, A., Nelson, M., Kuluski, K., Lui, V., Cunningham, H. V., Nie, J. X., ... Upshur, R. E. (2016). Treatment goal setting for complex patients: Protocol for a scoping review. *BMJ Open, 6*(5). <https://doi.org/10.1136/bmjopen-2016-011869>
- Gulbrandsen, P., Fugelli, P., Sandvik, L., & Hjortdahl, P. (1998). Influence of social problems on management in general practice: multipractice questionnaire survey. *BMJ, 317*(July).
- Hall, M., Dugan, E., Zheng, B., & Mishra, A. (2001). Trust in physicians and medical institutions: what is it, can it be measured, and does it matter? *The Milbank Quarterly, 79*(4), 613–639. Retrieved from <http://www.jstor.org/stable/3350617>
- Hardcastle, S., Blake, N., & Hagger, M. S. (2012). The effectiveness of a motivational interviewing primary-care based intervention on physical activity and predictors of change in a disadvantaged community. *Journal of Behavioral Medicine, 35*(3), 318–333. <https://doi.org/10.1007/s10865-012-9417-1>

- Harland, J., White, M., Drinkwater, C., Chinn, D., Farr, L., & Howel, D. (1999). The Newcastle exercise project: a randomised controlled trial of methods to promote physical activity in primary care. *BMJ (Clinical Research Ed.)*, *319*(7213), 828–832. <https://doi.org/10.1136/bmj.319.7213.828>
- Harrison, R. A., Roberts, C., & Elton, P. J. (2005). Does primary care referral to an exercise programme increase physical activity 1 year later? A randomized controlled trial. *Journal of Public Health*, *27*(1), 25–32. <https://doi.org/10.1093/pubmed/fdh197>
- Hart, C. L. (2017). Viewing addiction as a brain disease promotes social injustice. *Nature Human Behaviour*, *1*(3), 2017. <https://doi.org/10.1038/s41562-017-0055>
- Haughton McNeill, L., Kreuter, M. W., & Subramanian, S. V. (2006). Social Environment and Physical activity : A review of concepts and evidence. *Social Science & Medicine*, *63*, 1011–1022. <https://doi.org/10.1016/j.socscimed.2006.03.012>
- Health Force Ontario. (2017). Primary Care Payment Models in Ontario. Retrieved February 27, 2018, from <http://www.health.gov.on.ca/en/pro/programs/pcpm/>
- Heath, G., Parra, D., Sarmiento, O., Andersen, L., Owen, N., Goenka, S., ... Brownson, R. (2012). Evidence-based intervention in physical activity: lessons from around the world. *Lancet*, *380*(9838), 272–281. [https://doi.org/10.1016/S0140-6736\(12\)60816-2](https://doi.org/10.1016/S0140-6736(12)60816-2). Evidence-based
- Hébert, E. T., Caughy, M. O., & Shuval, K. (2012). Primary care providers' perceptions of physical activity counselling in a clinical setting: a systematic review. *British Journal of Sports Medicine*, *46*(9), 625–631. <https://doi.org/10.1136/bjsports-2011-090734>
- Heggie, V. (2010). A century of cardiomythology: Exercise and the heart c.1880-1980. *Social History of Medicine*, *23*(2), 280–298. <https://doi.org/10.1093/shm/hkp063>
- Henry, D. a, Schultz, S. E., Glazier, R. H., Bhatia, R. S., Dhalla, I. a, & Laupacis, A. (2012). *Payments to Ontario Physicians from Ministry of Health and Long-Term Care Sources 1992/93 to 2009/10. ICES Investigative Report*. Retrieved from <http://www.ices.on.ca/~media/Files/Atlases-Reports/2012/Payments-to-Ontario-physicians-from-MOHLTC-sources/Full-report.ashx%5Cnpapers3://publication/uuid/8B02E649-B9C6-42A8-AAEC-41BF8493544F>
- Her Majesty's Government. (2010). *Healthy Lives , Healthy People : Our strategy for public health in England* (Vol. 363). Retrieved from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/216096/dh_127424.pdf
- Hillsdon, M., Thorogood, M., White, I., & Foster, C. (2002). Advising people to take more exercise is ineffective: a randomized controlled trial of physical activity promotion in primary care. *International Journal of Epidemiology*, *31*(4), 808–815. <https://doi.org/10.1093/ije/31.4.808>
- Hogg, W., Dahrouge, S., Russell, G., Tuna, M., Geneau, R., Muldoon, L., ... Johnston, S. (2009). Health promotion activity in primary care: performance of models and associated factors. *Open Medicine*, *3*(3), e165-73.

- Hong, C. S., Atlas, S. J., Ashburner, J. M., Barry, M. J., & Grant, R. W. (2010). Characteristics and Primary Care Physician Clinical Performance Rankings, *304*(10), 1107–1113.
- Husk, K., Blockley, K., Lovell, R., Bethel, A., Bloomfield, D., Warber, S., ... Garside, R. (2016). What approaches to social prescribing work, for whom, and in what circumstances? A protocol for a realist review. *Systematic Reviews*, *5*(1), 1–7. <https://doi.org/10.1186/s13643-016-0269-6>
- Jackson, S. F., & Riley, B. L. (2007). Health promotion in Canada: 1986 to 2006. *Promotion & Education*, *14*(4), 214–218. <https://doi.org/10.1177/10253823070140040601>
- Jacobson, D. M., Strohecker, L., Compton, M. T., Katz, D. L., & Barry, M. (2005). Physical activity counseling in the adult primary care setting: Position statement of the American College of Preventive Medicine. *American Journal of Preventive Medicine*, *29*(2), 158–162. <https://doi.org/10.1016/j.amepre.2005.04.009>
- Jansink, R., Braspenning, J., van der Weijden, T., Elwyn, G., & Grol, R. (2010). Primary care nurses struggle with lifestyle counseling in diabetes care: a qualitative analysis. *BMC Family Practice*, *11*(1), 41. <https://doi.org/10.1186/1471-2296-11-41>
- Jimmy, G., & Martin, B. W. (2005). Implementation and effectiveness of a primary care based physical activity counselling scheme. *Patient Education and Counseling*, *56*(3), 323–331. <https://doi.org/10.1016/j.pec.2004.03.006>
- Jones, D. E., Carson, K. A., Bleich, S. N., & Cooper, L. A. (2012). Patient trust in physicians and adoption of lifestyle behaviours to control high blood pressure. *Patient Educ Couns*, *89*(1), 57–62. <https://doi.org/10.1016/j.pec.2012.06.003>.Patient
- Joyner, M. J. (2012). Standing up for exercise: Should deconditioning be medicalized? *Journal of Physiology*, *590*(15), 3413–3414. <https://doi.org/10.1113/jphysiol.2012.238550>
- Kahlke, R. M. (2014). Generic qualitative approaches: Pitfalls and benefits of methodological mixology. *International Journal of Qualitative Methods*, *13*(1), 37–52. <https://doi.org/10.1177/160940691401300119>
- Kamphuis, C. B. M., van Lenthe, F. J., Giskes, K., Brug, J., & Mackenbach, J. P. (2007). Perceived environmental determinants of physical activity and fruit and vegetable consumption among high and low socioeconomic groups in the Netherlands. *Health & Place*, *13*(2), 493–503. <https://doi.org/10.1016/j.healthplace.2006.05.008>
- Kardakis, T., Weinehall, L., Jerdén, L., Nyström, M. E., & Johansson, H. (2013). Lifestyle interventions in primary health care: Professional and organizational challenges. *European Journal of Public Health*, *24*(1), 79–84. <https://doi.org/10.1093/eurpub/ckt052>
- Kerse, N., Elley, C. R., Robinson, E., & Arroll, B. (2005). Is physical activity counseling effective for older people? A cluster randomized, controlled trial in primary care. *Journal of the American Geriatrics Society*, *53*(11), 1951–1956. <https://doi.org/10.1111/j.1532-5415.2005.00466.x>
- Kidd, S. A., & Kral, M. J. (2005). Practicing participatory action research. *Journal of Counseling Psychology*, *52*(2), 187–195. <https://doi.org/10.1037/0022-0167.52.2.187>

- Kinmonth, A. L., Wareham, N. J., Hardeman, W., Sutton, S., Prevost, A. T., Fanshawe, T., ... Griffin, S. J. (2008). Efficacy of a theory-based behavioural intervention to increase physical activity in an at-risk group in primary care (Original Title; URL links to DARE Abstract): a randomised trial. *Lancet*, *371*, 41–48. [https://doi.org/10.1016/S0140-6736\(08\)60070-7](https://doi.org/10.1016/S0140-6736(08)60070-7)
- Kmietowicz, Z. (2000). Doctors told to treat nicotine addiction as a disease. *Bmj*, *320*(7232), 397–397. <https://doi.org/10.1136/bmj.320.7232.397>
- Kolt, G. S., Schofield, G. M., Kerse, N., Garrett, N., & Oliver, M. (2007). Effect of telephone counseling on physical activity for low-active older people in primary care: A randomized, controlled trial. *Journal of the American Geriatrics Society*, *55*(7), 986–992. <https://doi.org/10.1111/j.1532-5415.2007.01203.x>
- Kopelman, P. G. (2000). Obesity as a medical problem. *Nature*, *404*(6778), 635–643. <https://doi.org/10.1038/35007508>
- Lalonde, M. (1981). *A new perspective on the health of Canadians: a working document*. Retrieved from <http://www.phac-aspc.gc.ca/ph-sp/pdf/perspect-eng.pdf>
- Lamarche, K., & Vallance, J. (2013). Prescription for Physical Activity: A survey of Canadian Nurse Practitioners. *Canadian Nurse*, *109*(8), 22–26. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=104142577&site=ehost-live>
- Lamb, S. E., Bartlett, H. P., Ashley, A., & Bird, W. (2002). Can lay-led walking programmes increase physical activity in middle aged adults? A randomised controlled trial. *J. Epidemiol. Community Health J Epidemiol Community Health*, *56*(56), 246–253. <https://doi.org/10.1136/jech.56.4.246>
- Lantz, P. M., Lynch, J. W., House, J. S., James, M., Mero, R. P., Musick, M. A., & Williams, D. R. (2001). Socioeconomic disparities in health change in a longitudinal study of US adults : the role of health-risk behaviors, *53*, 29–40.
- Lau, D. C. W., Douketis, J. D., Morrison, K. M., Hramiak, I. M., Sharma, A. M., & Ur, E. (2007). 2006 Canadian clinic practice guidelines on the management and prevention of obesity in adults and children (summary). *CMAJ*, *176*(8).
- Laurant, M., Reeves, D., Hermens, R., Braspenning, J., Grol, R., & Sibbald, B. (2005). *Substitution of doctors by nurses in primary care (Review)*. *Cochrane Database of Systematic Reviews*. <https://doi.org/10.1002/14651858.CD001271.pub2>. www.cochranelibrary.com
- Lawton, B. A., Rose, S. B., Elley, C. R., Dowell, A. C., Fenton, A., & Moyes, S. A. (2009). Exercise on prescription for women aged 40-74 recruited through primary care: Two year randomised controlled trial. *British Journal of Sports Medicine*, *43*(2), 120–123. <https://doi.org/10.1136/bmj.a2509>
- Lee, I.-M., Shiroma, E. J., Lobelo, F., Puska, P., Blair, S. N., & Katzmarzyk, P. T. (2012). Impact of Physical Inactivity on the World's Major Non-Communicable Diseases. *The Lancet*, *380*(9838), 219–229. [https://doi.org/10.1016/S0140-6736\(12\)61031-9](https://doi.org/10.1016/S0140-6736(12)61031-9). Impact

- Lees, S. J., & Booth, F. W. (2005). Physical inactivity is a disease. *World Review of Nutrition and Dietetics*, 95, 73–9. <https://doi.org/10.1159/000088274>
- Leung, A. A., Daskalopoulou, S. S., Dasgupta, K., McBrien, K., Butalia, S., Zarnke, K. B., ... Rabi, D. M. (2017). Hypertension Canada's 2017 Guidelines for Diagnosis, Risk Assessment, Prevention, and Treatment of Hypertension in Adults. *Canadian Journal of Cardiology*, 33(5), 557–576. <https://doi.org/10.1016/j.cjca.2017.03.005>
- Lim, S., Vos, T., Flaxman, A. D., Goodarz, D., Shibuya, K., Adair-Rohani, H., ... Ezzati, M. (2012). A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*, 380(9859), 2224–2260. [https://doi.org/10.1016/S0140-6736\(12\)61766-8.A](https://doi.org/10.1016/S0140-6736(12)61766-8.A)
- Lipnowski, S., & LeBlanc, C. (2012). Healthy active living: physical activity guidelines for children and adolescents. *Paediatrics & Child Health*, 17(4), 209–210.
- Lowther, M., Mutrie, N., & Scott, E. M. (2002). Promoting physical activity in a socially and economically deprived community : a 12 month randomized control trial of fitness assessment and exercise consultation. *Journal of Sports Sciences*, 20, 577–588.
- Macauley, D. (1994). A history of physical activity , health and medicine, 87(January), 32–35.
- Manuel, D., Creator, M., Rosella, L., & Henry, D. (2009). *What Does it Take to Make a Healthy Province ? A benchmark study of jurisdictions in Canada. ICES Investigative Report*. Toronto.
- Manuel, D., Creatore, M., Rosella, L., & Henry, D. (2009). *What Does it Take to Make a Healthy Province ? ICES investigative report*.
- Maples, H. (2012). Embodying resistance: Gendering public space in ragtime social dance. *New Theatre Quarterly*, 28(3), 243–259. <https://doi.org/10.1017/S0266464X12000437>
- Maul, T. M., Zaidi, A., Kowalski, V., Hickey, J., Schnug, R., Hindes, M., ... Zaidi, A. (2015). Patient Preference and Perception of Care Provided By Advanced Nurse Practitioners and Physicians in Outpatient Adult Congenital Clinics. *Congenital Heart Disease*, 10, E225–E229. [https://doi.org/10.1016/S0735-1097\(14\)60609-4](https://doi.org/10.1016/S0735-1097(14)60609-4)
- Mauthner, N., & Doucet, A. (2003). Reflexive Accounts and Accounts of Reflexivity in Qualitative Data Analysis. *Sociology*, 37(3), 413–431.
- Mayes, R., & Armistead, B. (2013). Chronic disease, prevention policy, and the future of public health and primary care. *Medicine, Health Care and Philosophy*, 16(4), 691–697. <https://doi.org/10.1007/s11019-012-9454-0>
- McPhail, S., & Schippers, M. (2012). An evolving perspective on physical activity counselling by medical professionals. *BMC Family Practice*, 13, 4–7. <https://doi.org/10.1186/1471-2296-13-31>
- Mercer, S. W., & Watt, G. C. M. (2007). The Inverse Care Law : Clinical Primary Care Encounters in Deprived and Affluent Areas of Scotland. *Annals of Family Medicine*, 5(6), 503–510. <https://doi.org/10.1370/afm.778>.INTRODUCTION

- Meyer, J. (2000). Using qualitative methods in health related action research. *Bmj*, 320(7228), 178.
- Middleton, J. (2011). Healthy people, healthy lives. The English public health white paper: Risks and challenges for a new public health system. *Clinical Medicine, Journal of the Royal College of Physicians of London*, 11(5), 430–433. Retrieved from <http://docserver.ingentaconnect.com/deliver/connect/rcop/14702118/v11n5/s6.pdf?expires=1319481205&id=65106224&titleid=5200003&accname=Elsevier&checksum=6EA828628341C97916E78DB1D944D7AE%5Cnhttp://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed10&NEW>
- Milne, J., & Oberle, K. (2005). Enhancing rigor in qualitative description: a case study. *Journal of Wound, Ostomy, and Continence Nursing: Official Publication of The Wound, Ostomy and Continence Nurses Society / WOCN*, 32(6), 413–420. <https://doi.org/10.1097/00152192-200511000-00014>
- Moe, G. W., Ezekowitz, J. A., O’Meara, E., Howlett, J. G., Fremes, S. E., Al-Hesayen, A., ... White, M. (2014). The 2013 Canadian cardiovascular society heart failure management guidelines update: Focus on rehabilitation and exercise and surgical coronary revascularization. *Canadian Journal of Cardiology*, 30(3), 249–263. <https://doi.org/10.1016/j.cjca.2013.10.010>
- Morey, M. C., Peterson, M. J., Pieper, C. F., Sloane, R., Crowley, G. M., Cowper, P. A., ... Pearson, M. P. (2009). The veterans learning to improve fitness and function in elders study: A randomized trial of primary care-based physical activity counseling for older men: Clinical investigations. *Journal of the American Geriatrics Society*, 57(7), 1166–1174. <https://doi.org/10.1111/j.1532-5415.2009.02301.x>
- Morgan, D. L. (1996). Focus Groups. *Annual Review of Sociology*, 22(1), 129–152. <https://doi.org/10.1146/annurev.soc.22.1.129>
- Muldoon, L., Rowan, M. S., Geneau, R., Hogg, W., & Coulson, D. (2006). Models of primary care service delivery in Ontario: Why such diversity? *Healthcare Management Forum*, 19(4), 18–23. [https://doi.org/10.1016/S0840-4704\(10\)60240-2](https://doi.org/10.1016/S0840-4704(10)60240-2)
- Norris, S. L., Grothaus, L. C., Buchner, D. M., & Pratt, M. (2000). Effectiveness of Physician-Based Assessment and Counseling for Exercise in a Staff Model HMO. *Preventive Medicine*, 30(6), 513–523. <https://doi.org/10.1006/pmed.2000.0673>
- O’Donnell, D. E., Hernandez, P., Kaplan, A., Aaron, S., Bourbeau, J., Marciniuk, D., ... Voduc, N. (2008). Canadian Thoracic Society recommendations for management of chronic obstructive pulmonary disease - 2008 update - highlights for primary care. *Can Respir J*, 15 Suppl A(February), 1A–8A. <https://doi.org/10.1155/2008/641965>
- Oandasan, I. F., Hammond, M., Gotlib Conn, L., Callahan, S., Gallinaro, A., & Moaveni, A. (2010). Family practice registered nurses: The time has come. *Canadian Family Physician*, 56(10), e375–e382.
- Oelke, N. D., White, D., Besner, J., Doran, D., Hall, L. M., & Giovannetti, P. (2008). Nursing workforce utilization: an examination of facilitators and barriers on scope of practice. *Nursing Leadership (1910-622X)*, 21(1), 58–71. <https://doi.org/10.12927/cjnl.2008.19691>

- Orrow, G., Kinmonth, A.-L., Sanderson, S., & Sutton, S. (2012). Effectiveness of physical activity promotion based in primary care: systematic review and meta-analysis of randomised controlled trials. *Bmj*, *344*(mar26 1), e1389–e1389. <https://doi.org/10.1136/bmj.e1389>
- Ortiz, S. E., Kawachi, I., & Boyce, A. M. (2017). The medicalization of obesity, bariatric surgery, and population health. *Health (United Kingdom)*, *21*(5), 498–518. <https://doi.org/10.1177/1363459316660858>
- Osborn, R., Moulds, D., Schneider, E., Doty, M., Squires, D., & Sarnak, D. (2015). Primary care physicians in ten countries report challenges caring for patients with complex health needs. *Health Affairs*, *34*(12), 2104–2112. <https://doi.org/10.1377/hlthaff.2015.1018>
- Papaioannou, A., Morin, S., Cheung, A. M., Atkinson, S., Brown, J. P., Feldman, S., ... Leslie, W. D. (2010). 2010 clinical practice guidelines for the diagnosis and management of osteoporosis in Canada: Summary. *Cmaj*, *182*(17), 1864–1873. <https://doi.org/10.1503/cmaj.100771>
- Pearson, A. (2003). Multidisciplinary nursing: Re-thinking role boundaries. *Journal of Clinical Nursing*, *12*(5), 625–629. <https://doi.org/10.1046/j.1365-2702.2003.00794.x>
- Persson, G., Brorsson, A., Ekvall Hansson, E., Troein, M., & Strandberg, E. L. (2013a). Physical activity on prescription (PAP) from the general practitioner's perspective - A qualitative study. *BMC Family Practice*, *14*(1), 1. <https://doi.org/10.1186/1471-2296-14-128>
- Persson, G., Brorsson, A., Ekvall Hansson, E., Troein, M., & Strandberg, E. L. (2013b). Physical activity on prescription (PAP) from the general practitioner's perspective – a qualitative study. *BMC Family Practice*, *14*(1), 128. <https://doi.org/10.1186/1471-2296-14-128>
- Peterson, J. A. (2007). Get moving! Physical activity counseling in primary care. *Journal of the American Academy of Nurse Practitioners*, *19*(7), 349–357. <https://doi.org/10.1111/j.1745-7599.2007.00239.x>
- Petrella, R. J. (2007). Physical Activity Counseling and Prescription Among Canadian Primary Care Physicians. *Archives of Internal Medicine*, *167*(16), 1774. <https://doi.org/10.1001/archinte.167.16.1774>
- Petrella, R. J., Koval, J. J., Cunningham, D. A., & Paterson, D. H. (2003). Can primary care doctors prescribe exercise to improve fitness? The Step Test Exercise Prescription (STEP) project. *American Journal of Preventive Medicine*, *24*(4), 316–322. [https://doi.org/10.1016/S0749-3797\(03\)00022-9](https://doi.org/10.1016/S0749-3797(03)00022-9)
- PHAC. (1999). *Towards a Healthy Future: Second report on the health of Canadians*.
- PHAC, & CIHI. (2011). *Obesity in Canada*.
- Pine, K., & Fletcher, B. (2014). Time to shift brain channels to bring about effective changes in health behaviour. *Perspectives in Public Health*, *134*(1), 16–17. <https://doi.org/10.1177/1757913913514705>
- Pinto, B. M., Goldstein, M. G., Ashba, J., Sciamanna, C. N., & Jette, A. (2005). Randomized controlled trial of physical activity counseling for older primary care patients. *American*

- Journal of Preventive Medicine*, 29(4), 247–255.
<https://doi.org/10.1016/j.amepre.2005.06.016>
- Popay, J., Kowarzik, U., Mallinson, S., Mackian, S., & Barker, J. (2007). Social problems, primary care and pathways to help and support: Addressing health inequalities at the individual level. Part I: The GP perspective. *Journal of Epidemiology and Community Health*, 61(11), 966–971. <https://doi.org/10.1136/jech.2007.061937>
- Prouty, C. D., Mazor, K. M., Greene, S. M., Roblin, D. W., Firreno, C. L., Lemay, C. A., ... Gallagher, T. H. (2014). Providers' perceptions of communication breakdowns in cancer care. *Journal of General Internal Medicine*, 29(8), 1122–1130.
<https://doi.org/10.1007/s11606-014-2769-1>
- Raphael, D. (2006). Social Determinants of Health: Present Status, Unanswered Questions, and Future Directions. *International Journal of Health Services*, 36(4), 651–677.
<https://doi.org/10.2190/3MW4-1EK3-DGRQ-2CRF>
- Rayner, J., & Muldoo, L. (2017). Staff perceptions of community health centre team function in Ontario. *Canadian Family Physician*, 63(7), e335–e340. Retrieved from
<http://www.embase.com/search/results?subaction=viewrecord&from=export&id=L617349687%0Ahttp://sfx.library.uu.nl/utrecht?sid=EMBASE&issn=0008350X&id=doi:&atitle=Staff+perceptions+of+community+health+centre+team+function+in+Ontario&stitle=Can.+Fam.+Phys.&tit>
- Reay, T., Golden-biddle, K., Germann, K., Reay, T., & Golden-biddle, K. (2006). Legitimizing a New Role : Small Wins and Microprocesses of Change. *Academy of Management*, 49(5), 977–998.
- Reay, T., Goodrick, E., Casebeer, A., & Hinings, C. R. (Bob). (2013). Legitimizing new practices in primary health care. *Health Care Management Review*, 38(1), 9–19.
<https://doi.org/10.1097/HMR.0b013e31824501b6>
- Ribera, A. P., McKenna, J., & Riddoch, C. (2005). Attitudes and practices of physicians and nurses regarding physical activity promotion in the Catalan primary health-care system. *European Journal of Public Health*, 15(6), 569–575. <https://doi.org/10.1093/eurpub/cki045>
- Richards, E. A. (2015). The Evolution of Physical Activity Promotion. *American Journal of Nursing*, 115(8), 50–54. <https://doi.org/10.1097/01.NAJ.0000470400.28683.97>
- Rollnick, S., Butler, C. C., McCambridge, J., Kinnersley, P., Elwyn, G., & Resnicow, K. (2005). Consultations about changing behaviour. *BMJ : British Medical Journal*, 331, 961–963.
<https://doi.org/10.1136/bmj.331.7522.961>
- Rubio-Valera, M., Pons-Vigués, M., Martínez-Andrés, M., Moreno-Peral, P., Berenguera, A., & Fernández, A. (2014). Barriers and facilitators for the implementation of primary prevention and health promotion activities in primary care: A synthesis through meta-ethnography. *PLoS ONE*, 9(2). <https://doi.org/10.1371/journal.pone.0089554>
- Sackett, D. L. (1979). Bias in analytic research. *Journal of Chronic Diseases*, 32(1–2), 51–63.
[https://doi.org/10.1016/0021-9681\(79\)90012-2](https://doi.org/10.1016/0021-9681(79)90012-2)
- Sadler, J. Z., Jotterand, F., Lee, S. C., & Inrig, S. (2009). Can medicalization be good? Situating

- medicalization within bioethics. *Theoretical Medicine and Bioethics*, 30(6), 411–425.
<https://doi.org/10.1007/s11017-009-9122-4>
- Safford, M. M., Allison, J. J., & Kiefe, C. I. (2007). Patient complexity: More than comorbidity. The vector model of complexity. *Journal of General Internal Medicine*, 22(SUPPL. 3), 382–390. <https://doi.org/10.1007/s11606-007-0307-0>
- Salant, T., & Santry, H. P. (2006). Internet marketing of bariatric surgery: Contemporary trends in the medicalization of obesity. *Social Science and Medicine*, 62(10), 2445–2457.
<https://doi.org/10.1016/j.socscimed.2005.10.021>
- Sanchez, A., Bully, P., Martinez, C., & Grandes, G. (2015). Effectiveness of physical activity promotion interventions in primary care: A review of reviews. *Preventive Medicine*, 76(S), S56–S67. <https://doi.org/10.1016/j.ypmed.2014.09.012>
- Sandelowski, M. (2000). Focus on research method: Whatever happened to Qualitative Description. *Research in Nursing & Health*, (23), 334–340. [https://doi.org/10.1002/1098-240X\(200008\)23:4<334::AID-NUR9>3.0.CO;2-G](https://doi.org/10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G)
- Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing and Health*, 33(1), 77–84. <https://doi.org/10.1002/nur.20362>
- Schlaff, A. (2013). Behavior change in America: Public Health, Medicine, and Individual Counseling. *AMA Journal of Ethics*, 15(4), 353–361.
<https://doi.org/10.1001/virtualmentor.2010.12.8.medu1-1008>
- Schofield, G., Croteau, K., & McLean, G. (2005). Trust levels of physical activity information sources: a population study. *Health Promotion Journal of Australia*, 16(3).
- Schrop, S. L., Pendleton, B. F., McCord, G., Gil, K. M., Stockton, L., McNatt, J., & Gilchrist, V. J. (2006). The medically underserved: who is likely to exercise and why? *Journal of Health Care for the Poor and Underserved*, 17(2), 276–289. <https://doi.org/10.1353/hpu.2006.0069>
- Seehusen, D. A., Bowman, M. A., & Neale, A. V. (2014). Context and trade-offs in family medicine. *Journal of the American Board of Family Medicine*, 27(4), 433–436.
<https://doi.org/http://dx.doi.org/10.3122/jabfm.2014.04.140146>
- Sigal, R., Armstrong, M., Colby, P., Kenny, G., Plotnikoff, R., Reichert, S., & Riddell, M. (2013). Physical activity and diabetes Canadian Diabetes Association Clinical Practice Guidelines Expert Committee. *Can J Diabetes*, 37, S40–S44.
<https://doi.org/10.1016/j.jcjd.2013.01.018>
- Spring, B., Moller, A. C., & Coons, M. J. (2012). Multiple health behaviours: Overview and implications. *Journal of Public Health*, 34(SUPPL. 1), 3–10.
<https://doi.org/10.1093/pubmed/fdr111>
- Spring, & Joel. (1974). Mass Culture and School Sports. *History of Education Quarterly*, 14(4), 483–499.
- Stamatakis, E., & Chaudhury, M. (2008). Temporal trends in adults' sports participation patterns in England between 1997 and 2006: the Health Survey for England. *British Journal of Sports Medicine*, 42. <https://doi.org/10.1136/bjism.2008.048082>

- Starks, H., & Trinidad, S. B. (2007). Choose your method: a comparison of phenomenology, discourse analysis, and grounded theory. *Qual. Health Res.*, 17(10), 1372–1380.
- Statistics Canada. (n.d.). *Household population meeting/not meeting the Canadian physical activity guidelines*. Retrieved from <https://www150.statcan.gc.ca/t1/tb11/en/tv.action?pid=1310033701>
- Statistics Canada. (2017). *Census Profile. 2016 Census*. Ottawa.
- Teng, K. A., Butler, R. S., Schramm, S., Isaacson, J. H., Nielsen, C., & Paradis, C. (2014). Physicians caring for physicians: The perspective of the primary care physician. *Southern Medical Journal*, 107(5), 301–305. <https://doi.org/10.1097/SMJ.0000000000000095>
- The Writing Group for the Activity Counseling Trial Research Group. (2001). Effects of Physical Activity Counseling in Primary Care The Activity Counseling Trial: A Randomized Control Trial. *JAMA*, 286(6).
- Thebault, J. L., Ringa, V., Bloy, G., Pendola-Luchel, I., Paquet, S., Panjo, H., ... Rigal, L. (2017). Are primary-care physician practices related to health behaviors likely to reduce social inequalities in health? *Preventive Medicine*, 99, 21–28. <https://doi.org/10.1016/j.ypmed.2017.01.023>
- Thind, A., Feightner, J., Stewart, M., Thorpe, C., & Burt, A. (2008). Who delivers preventive care as recommended? Analysis of physician and practice characteristics. *Canadian Family Physician*, 54.
- Tobler, L. (2010). A Primary Problem: more patients under federal health reform with fewer primary care doctors spell trouble. *State Legislatures*, 36(10), 20–24.
- Torjesen, I. (2016). Social prescribing could help alleviate pressure on GPs. *BMJ (Clinical Research Ed.)*, 352(March), i1436. <https://doi.org/10.1136/bmj.i1436>
- Tulloch, H., Fortier, M., & Hogg, W. (2006). Physical activity counseling in primary care: Who has and who should be counseling? *Patient Education and Counseling*, 64(1–3), 6–20. <https://doi.org/10.1016/j.pec.2005.10.010>
- Turner, B., & Cuttler, L. (2011). The Complexity of Measuring Clinical Complexity. *Annals of Internal Medicine*, 155(12), 851–852.
- Vallgård, S. (2010). Is the focus on health-related behaviours a new phenomenon? *Social Studies of Science*, 40(4), 609–614. <https://doi.org/10.1177/0306312710366067>
- Van Peet, P. G., Drewes, Y. M., Gussekloo, J., & De Ruijter, W. (2015). GPs' perspectives on secondary cardiovascular prevention in older age: A focus group study in the Netherlands. *British Journal of General Practice*, 65(640), e739–e747. <https://doi.org/10.3399/bjgp15X687373>
- Van Sluijs, E. M. F., Van Poppel, M. N. M., Twisk, J. W. R., Chin A Paw, M. J., Calfas, K. J., & Van Mechelen, W. (2005). Effect of a tailored physical activity intervention delivered in general practice settings: Results of a randomized controlled trial. *American Journal of Public Health*, 95(10), 1825–1831. <https://doi.org/10.2105/AJPH.2004.044537>

- Vuori, I. M., Lavie, C. J., & Blair, S. N. (2013). Physical activity promotion in the health care system. *Mayo Clinic Proceedings*, 88(12), 1446–1461. <https://doi.org/10.1016/j.mayocp.2013.08.020>
- Warburton, D. E., Charlesworth, S., Ivey, A., Nettlefold, L., & Bredin, S. S. (2010). A systematic review of the evidence for Canada's Physical Activity Guidelines for Adults. *International Journal of Behavioral Nutrition and Physical Activity*, 7(1), 39. <https://doi.org/10.1186/1479-5868-7-39>
- WHO International Conference on Primary Health Care. (1978). *Declaration of Alma-Ata*. Alma-Ata, USSR. Retrieved from http://www.who.int/publications/almaata_declaration_en.pdf
- Wiedmeyer, M., Lofters, A., & Rashid, M. (2012). Cervical cancer screening among vulnerable women: Factors affecting guideline adherence at a community health centre in Toronto, ONT. *Can Fam Physician*, 58, 521–526.
- Wilkinson, R., & Marmot, M. (2003). Social Determinants of Health: the Solid Facts. *World Health Organization*, 2(2), 1–33. <https://doi.org/10.1016/j.jana.2012.03.001>
- Wilson, D. K., Kirtland, K. A., Ainsworth, B. E., & Addy, C. L. (2004). Socioeconomic status and perceptions of access and safety for physical activity. *Annals of Behavioral Medicine*, 28(1), 20–28. https://doi.org/10.1207/s15324796abm2801_4
- Wojnar, D., & Swanson, K. (2007). Phenomenology: An Exploration. *Jornal of Holistic Nursing*, 25(3), 172–180.
- Woodruff, R. C., Schauer, G. L., Addison, A. R., Gehlot, A., & Kegler, M. C. (2016). Barriers to weight loss among community health center patients: qualitative insights from primary care providers. *BMC Obesity*, 1–8. <https://doi.org/10.1186/s40608-016-0123-3>
- World Health Organization. (1986). *Ottawa Charter for health Promotion: an international conference on health promotion*. Retrieved from <https://www.canada.ca/content/dam/phac-aspc/documents/services/health-promotion/population-health/ottawa-charter-health-promotion-international-conference-on-health-promotion/charter.pdf>
- World Health Organization. (2010). *Global recommendations on Physical Activity for Health*. Geneva, Switzerland.
- World Health Organization. (2018). Physical Activity. Retrieved from http://www.who.int/topics/physical_activity/en/
- Yoast, R. A., Wilford, B. B., & Hayashi, S. W. (2008). Encouraging physicians to screen for and intervene in substance use disorders: Obstacles and strategies for change. *Journal of Addictive Diseases*, 27(3), 77–97. <https://doi.org/10.1080/10550880802122687>

Appendix 1: Focus Group Question Guide

General background:

1. What type of practice do you do?
2. What are your most common clinical encounters?

Activity Counseling, current practices:

3. Do you feel activity counselling is an integral component of your scope of practice?
4. Did you ever receive any training in providing activity counselling, if so, what kind?
5. How often does activity counselling arise during your clinical encounters?
6. Are there any techniques or resources you find particularly helpful for activity counselling?
7. Do you feel your activity counselling is effective – why or why not?

Barriers:

8. What, if any, are the barriers to you providing activity counselling?
9. Do you perceive any barriers to patients following your activity counselling? If so, do you feel you have the tools to help them address these barriers?

Specific groups:

10. How would you describe the demographics of your practice populations?
11. Do you feel activity counselling would be beneficial for your practice populations? Why or why not?
12. Do you ever change your approach to activity counselling based on characteristics of the patient?
13. Are there any populations where you find activity counselling particularly challenging?
14. Do you feel you are able to connect your patients to the community resources they need for activity? Why or why not?
15. Are there particular resources you wish you knew more about (i.e. services in certain languages, or for certain costs, or within certain neighbourhoods)?

Tool design:

16. What would be the top 3 pieces of information you would want included in an activity counselling clinical tool?
17. Would you find it easiest to use a reference on paper, in an EMR or online during a clinical encounter?
18. Have you heard about any activity counseling tools, and if so do you find them useful? (if not provide samples of activity prescriptions, 5As tool kit, etc)

Appendix 2: Demographic Survey Questions

Participant ID: _____

Discipline: _____

Clinic site of practice: _____

Are you a full or part-time provider? _____

How long have you been practicing? _____

For how many years have you been based at the present location? _____

For how many years have you worked in a multidisciplinary team?

How do you feel about the following statement:

“Physical activity counseling is an integral part of practice for my discipline”

Strongly Disagree

Disagree

Neutral

Agree

Strongly Agree

Table 1: Summary of Select Canadian Guidelines for Physical Activity

Guideline	Recommendation
Canadian Physical Activity Guidelines (Canadian Society for Exercise Physiology, 2012)	150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more
Canadian Hypertension Guidelines (Leung et al., 2017)	30-60 minutes of moderate intensity dynamic exercise 4-7 days per week
Canadian Diabetes Guidelines (Sigal et al., 2013)	<ul style="list-style-type: none"> • Minimum of 150 minutes of moderate- to vigorous-intensity aerobic exercise each week, spread over at least 3 days of the week, with no more than 2 consecutive days without exercise. • Resistance exercise at least twice a week and preferably 3 times per week • People with diabetes with possible CVD or microvascular complications of diabetes who wish to undertake exercise that is substantially more vigorous than brisk walking should have medical evaluation for conditions that might increase exercise-associated risk. The evaluation would include history, physical examination (including funduscopic exam, foot exam, and neuropathy screening), resting ECG and, possibly, exercise ECG stress testing
Canadian Heart Failure Guidelines (Moe et al., 2014)	<ul style="list-style-type: none"> • All patients with stable New York Heart Association (NYHA) class I-III symptoms be considered for enrollment in a supervised tailored exercise training program • Assessment of clinical status by a clinician experienced in the management of heart failure patients be completed before considering an exercise training program • gradual mobilization and/or small muscle group strength/flexibility exercises be considered as soon as possible either alone or in combination for patients with NYHA class IV symptoms or recently decompensated heart failure. This should be considered only in consultation with an experienced heart failure team • moderate-intensity continuous aerobic exercise training at rate of Borg Rating Perceived Exertion (RPE) scale 3-5, 65%-85% maximum HR, or 50%- 75% of peak VO₂
Canadian Osteoporosis Guidelines (Papaioannou et al., 2010)	<ul style="list-style-type: none"> • Exercises involving resistance training appropriate for the individual's age and functional capacity and/or weight- bearing aerobic exercises • Exercises to enhance core stability and thus to compensate for weakness or postural abnormalities for individuals who have had vertebral fractures • Exercises that focus on balance, such as tai chi, or on balance and gait training should be considered for those at risk of falls

Canadian Dyslipidemia Guidelines (Anderson et al., 2016)	150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more
Canadian Obesity Guidelines (Lau et al., 2007)	<ul style="list-style-type: none"> • Physical activity and exercise should be sustainable and tailored to the individual. We recommend that the total duration be increased gradually to maximize the weightloss benefits • 30 minutes a day of moderate intensity, increasing, when appropriate, to 60 minutes a day) • Endurance exercise training may reduce the risk of cardiovascular morbidity in healthy postmenopausal women, and we suggest its use for adults with an increased BMI
Canadian COPD Guidelines* (O'Donnell et al., 2008)	All patients with COPD should be encouraged to maintain an active lifestyle. Clinically stable patients who remain dyspneic and limited in their exercise capacity despite optimal pharmacotherapy should be referred for supervised pulmonary rehabilitation.

*note there are several guidelines for COPD, this was selected as it was specifically addressing primary care management

Note these recommendations are taken directly from the cited guidelines, often verbatim. Additionally, this table is not intended to include all guidelines relevant to primary care, rather selected guidelines were chosen to be included here as exemplars as they represent a range of conditions that are common in primary care, and directly address physical activity recommendations that could inform primary care providers counseling

Table 2: Studies of Physical Activity Counseling Interventions

Author(s)	Year	Intervention	Providers	Outcome Measures	Outcomes
Goldstein et al. (Goldstein et al., 1999)	1999	Brief counseling by physician vs. usual care	Physician	Self-reported physical activity	Improvements in stage of change at 6 weeks not maintained at 8 months, no change in self-reported physical activity
Harland et al.* (Harland et al., 1999)	1999	1) Motivational interviewing x 1 2) MI x 1 + vouchers for leisure centre 3) MI x 6 4) MI x 6 and vouchers Vs usual care	Health visitor	Physical activity score, sessions of activity in preceding 4 weeks	Increase in physical activity score at 12 weeks, most for those that had the most intervention, however effect not sustained at 1 year
Chambers et al.* (Chambers, Chambers, & Campbell, 2000)	2000	1) Questionnaire about PA 2) Questionnaire + booklet 3) Above + individualized exercise session 4) Above + follow-up group exercise sessions	Written materials and physiotherapists	Reported exercise frequency, behaviour and health questionnaire	Trend for interventions to increase activity, only significant in Group 4 vs Group 1
Norris et al. (Norris et al., 2000)	2000	Physicians trained to delivery PACE counseling, reminder phone call at one month. Enhanced intervention group with additional reminders. (reported as a combined intervention result for both groups), vs. usual care	Physicians, researchers	Self-reported energy expenditure, time spent active, self-efficacy, social support, perceived barriers, mental health, physical function	No difference in energy expended, time spent active at 6 months of follow-up
The Writing group for the Activity Counseling Trial	2001	ACT 3-arm RCT: 1) Advice (physician advice and written materials) 2) Assistance (Advice + mail and behavioural counseling) 3)	Physicians, Health educators	Cardiorespiratory fitness (VO ₂ max), self-reported total physical activity	Vo ₂ max improved for women in Assistance and Counseling arms at 24 months. No improvement in total physical activity, no

Research Group* (The Writing Group for the Activity Counseling Trial Research Group, 2001)		Counseling (Assistance+ telephone counseling and behavioural classes)			improvement in either measure for men.
Hillsdon et al.* (Hillsdon, Thorogood, White, & Foster, 2002)	2002	1) Direct advice 2) Brief negotiation (motivational interviewing) Vs. control	Health promotion specialist	Self-reported physical activity	No significant difference between groups, brief negotiation better than control at 12 months only for population that completed study
Lamb et al.* (Lamb, Bartlett, Ashley, & Bird, 2002)	2002	Advise by physiotherapist vs advice by physiotherapist and lay-led walking group information	Physiotherapist	Self-reported physical activity, attitudes to activity, BMI, blood pressure, aerobic capacity, cholesterol	No difference in groups by intention to treat analysis, difference only in those that completed trial in increasing moderate intensity activity about 120 minutes per week at 12 months.
Elley et al.*^ (Elley, Kerse, Arroll, & Robinson, 2003)	2003	Oral and written advice from GPs who have been trained, with referral for subsequent follow-up by exercise specialists (“Green prescription”) vs usual care	Physicians, exercise specialists	Change in self-report physical activity, quality of life, Framingham risk and blood pressure	Both exercise and proportion of participants achieving 2.5 hr/week of leisure exercise increased in intervention group at 12 months.
Petrella et al.* (Petrella, Koval, Cunningham, & Paterson, 2003)	2003	Exercise prescription vs usual care counseling	Physicians	Aerobic fitness, predicted aerobic fitness, self-efficacy,	Improved aerobic fitness maintained at 6 and 12 months

Harrison et al.* (Harrison, Roberts, & Elton, 2005)	2005	Referral to local-authority exercise referral scheme with written information vs written information only	Exercise officers	Meeting of physical activity target of 90 minutes/week	Significant increase at 6 months, no longer significant at 12 months
Jimmy and Martin* (Jimmy & Martin, 2005)	2005	Physician feedback vs. Feedback with further advice and 45 minutes counseling session	Physician, physical activity specialist	Active behaviour (action or maintenance stage or engaging in 3+ weekly sessions of physical activity)	Both groups improved physical activity to the same extent
Kerse et al.^ (Kerse, Elley, Robinson, & Arroll, 2005)	2005	Counseling from GP/practice nurse with exercise specialist follow-up x 3 months (“Green prescription”) vs usual care	Physicians, nurse practitioners, exercise specialists	Physical activity, energy expenditure, blood pressure, quality of life, musculoskeletal injuries, falls, hospitalizations	Physical activity levels improved at 12 months of follow up
Pinto et al. (Pinto, Goldstein, Ashba, Sciamanna, & Jette, 2005)	2005	Clinician advise + exercise counseling via telephone vs. Clinical advice alone	Primary care provider, researcher	Self-reported physical activity, biotrainees	Both self reported and objective activity increased at 3 and 6 months with intervention
Van Sluijs et al.* (Van Sluijs et al., 2005)	2005	Primary care provider mediated PACE counseling vs usual care	Nurse practitioner or physician	Self reported physical activity, stage of change, height, weight, waist circumference	No effect on stage of change or physical activity, however population as a whole (intervention and control) experienced increased physical activity at 1 year of follow-up

Aittasalo et al. (Aittasalo, Miilunpalo, Kukkonen-Harjula, & Pasanen, 2006)	2006	2 hours of provider training for providers who then gave activity prescriptions, vs. usual care	Primarily physicians	Frequency and duration of activity at 2 and 6 months	Increase in overall physical activity at 2 months, and increased moderate intensity activity at 2 and 6 months
Bolognesi et al. (Bolognesi et al., 2006)	2006	2-arm RCT: 1) Experimental (PACE protocol given by physician), 2) control (usual care)	Primary care physicians	BMI, abdominal girth, self-reported readiness for physical activity, self-efficacy	Improved BMI, abdominal girth, stage of readiness and self-efficacy in intervention group at 5-6 months
Kolt et al.* (Kolt, Schofield, Kerse, Garrett, & Oliver, 2007)	2007	Telephone counseling vs usual care	Exercise counselor	Self-reported physical activity and quality of life	Increased physical activity at 12 months of
Kinmonth et al.* (Kinmonth et al., 2008)	2008	Brief advice leaflet, vs leaflet+1 year behaviour change programme either in person or over the phone	Trained facilitators	Daytime physical activity	No difference in groups at 1 year of follow-up
Lawton et al.* (Lawton et al., 2009)	2009	Counseling with green prescription by primary care nurse, with phone follow-up and repeat nurse visit at 6 months vs. usual care	Nurses	Proportion of participants self-reporting as meeting 150 minutes activity/week, quality of life	Increased activity in intervention group compared to controls at 12 and 24 months
Morey et al.* (Morey et al., 2009)	2009	Provider baseline in-person and follow-up counseling, monthly telephone counseling by a lifestyle counselor, one-time clinical endorsement of PA,	Primary care providers, lifestyle counselor	Gait speed, self reported PA, function and disability	Improvements in rapid gait speed and minutes of physical activity, with follow-up p to 12 months.

		monthly automated telephone messaging, and quarterly mailings vs. usual care			
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*Denotes articles included in the systematic review and meta-analysis by Orrow et al.

^Two studies which appeared to be conducted in the same location looking at the same trial, but different numbers of years of intervention

Methods: Articles were found by searching pubmed with the search terms “physical activity counseling and primary care” and “physical activity counseling and general practice” filtered by randomized control trials. In selecting trials to include here I focused on studies that measured outcomes relating to physical activity, not, for example, cost effectiveness, counseling practices, etc. Additionally, I focussed only on studies here interventions were based on primary care practice in clinic, not just referral to other services. Finally, I focused on studies that were looking at general population physical activity not based on specific conditions such as COPD or depression. As the goal was to provide a general summary of the literature, but not conduct a complete systematic review, the author stopped reviewing further search results after results sorted by relevance were consistently no longer useful (at about 100/395 results for the first search term and 60/127 results for the second).

Note: on review of the articles captured by this search it was found that there was some overlap with the articles that had also been included in the systematic review and meta-analysis conducted by Orrow, which was cited in this thesis. To avoid potential bias in presenting details for only a subset of the studies that contributed to that review, all studies (except one, to which I did not have library access) from the Orrow review were included in this table, even if they did not meet the original search criteria of taking place within the clinical setting of primary care practice. For ease of review the articles in this table that were also components of the Orrow review are identified by a ‘*’.

Table 3: Survey Results

		Physicians	Nurse Practitioners	Nurses (RN/RPN)
Number of participants		5	3	4
Type of practice	Full Time	3	3	4
	Part Time	2		
Years in Practice	3-5	3	2	3
	7-9		1	1
	13-15	2		
Years at current location	1-2		1	1
	3-4	2		3
	5-9	3	2	
Years in multidisciplinary Team	3-5	4		3
	7-13	1		1
	14-19		3	
“Physical activity counseling is an integral part of practice for my discipline”	Neutral			1
	Agree	1		3
	Strongly Agree	4	3	

Table 4: Providers' Understanding of Physical Activity

	Full Demonstrative Quotes
Physical activity integral to health	<p>MD3: I include physical activity in almost all of my medical problems, mental health, substance, smoking cessation programs, diabetes, weight loss, knee/joint pains, back pain. Everything includes physical activity.</p> <p>MD3: And you open any medical textbooks and every page talks about exercise, but not in detail, so you figure out that this is something good, and you know it in your own personal experience, that there is a benefit to this.</p> <p>MD5: But I think I have a discussion about exercise more than once a day.</p> <p>MD4: oh yeah, agree</p> <p>Nurse3: ...physical activity is like, it's like healthy eating, it's like, one of the basics, right?</p> <p>NP5: ...there's always a reason, right, for overall health, benefits, talking about cholesterol, hypertension, diabetes, whatever? You know, it's got multiple benefits there, and then of course stress reduction, and you know, I just, uh, um, (pretty well?) just anything, I mean it's obvious right? Overall good, good health has to incorporate activity</p>
Role of primary care providers only questioned once	<p>Nurse1: it's tailored towards that specific person, it has specific goal, right? So when you do counseling it's a measurable goal. That after you've done some counseling you can follow up and you can say whether the person has achieved the goal or didn't achieve the goal, and yeah, and it's usually very individual based. And now I'm thinking is that, how can you do this in a practical way, you can keep reminding the person but, it's not possible in, in a regular primary care, to do that individualized approach with exercises, when you're saying, ok this, this type of exercise is for you, if you have bad knees you don't do this, this exercise you do...like, what even is the role of the primary care practitioner in exercise counseling? Because knowledge, time, and whether we are actually the right person, right people to do that, because it's, let's say for example, when we do smoking cessation, then I have received a lot of training on smoking cessation, it's a program-based, it's individual based, like you do complete assessment of the person, right? Then you create the program for that specific person.</p> <p>Later in conversation:</p> <p>NP5: but physical activity...activity is part of primary care, prevention, right?</p> <p>NP5: It is, but to what extent, like</p> <p>Nurse1: to what extent, yeah</p>

	<p>Later in conversation: Nurse1: Sorry, before I go, I just wanted to maybe, it's, I don't know if there's any actually research out there saying what is the role of the primary care practitioner in exercise counseling? Because, there might be nothing, actually that would specific specifics, you know, how would you, in medicine, how would you approach that. Because let's say if we have a dietician to create the individuals, there's a dietician, there's a physiotherapist to provide that kind of counseling. We usually, we usually give like basic information, but if you to be, if you want this to be effective, it has to be tailored to individual person.</p>
<p>Physical activity as a medical concept – in response to diagnoses, specific and prescriptive, treatment modality</p>	<p>MD3: I include physical activity in almost all of my medical problems, mental health, substance, smoking cessation programs, diabetes, weight loss, knee/joint pains, back pain.</p> <p>MD5: Usually, I am asking the question when I, I figure, I realize they have a health problem that would, that they would really benefit from getting some extra physical activity.</p> <p>MD1: And then, it's occasionally mentioned in individuals who I also feel would benefit. Those who I feel may be slightly becoming more overweight, or are overweight, or they have a medical condition that may benefit from some, for example, extra physical activity, maybe weight loss as well.</p> <p>Nurse1: I think with diabetes it's more, you are basing your counseling on the guidelines, you have...like a very strict definitions of what it should be like.</p> <p>NP7: Your priority medication is your physical activity and then lifestyle management, eating your balance. So I put that right on top. Physical activity is right on top, then comes your balanced eating, and then comes the medication and all of that. So, if you do what, which is right on top, then maybe we have a chance of working on the others, right?</p> <p>Nurse6: I also think, like certain individuals, with like, arthritis, like, exercise geared to them. Someone who's had a heart attack and they want to start on physical activity, what kind of activity do you gear to them? Like, so, everyone has different types of illnesses, and different as --- mentioned, something for a diabetic it's probably a totally different exercise regime. So gearing it towards what's appropriate for them, I think that would be very important as well.</p> <p>Researcher : And so for those who then, have had experiences with giving physical activity counseling, have you found that you feel it's effective when you, when you do it?</p> <p>NP7: I've had a few, ok? Not in NP, but at the diabetes. I've had to stop their medications, I've had to reduce doses and I've had that...this is like, the exception, right?</p> <p>MD3: And I, follow up bloodwork sometimes works for, oh, you're hemoglobin A1c has improved, what did you do for the last 3 months? Oh it's that exercising, you see, you have a result here. So the person sees that as motivation, and keeps on going.</p>

<p>Practice defined by both health and social factors</p>	<p>MD2: There's, a lot of them are complex mental health, a lot of uninsured clients, without health cards, obviously, I think that's true for everybody here. And also pretty complex multi-system disorders, like, you know, pretty difficult to control hypertension, or diabetes, or kidney disease. So multi-system failure, sort of things like that</p> <p>MD5: Children with behavioural problems, adults with developmental disabilities, and immigrants, refugees, and young families, I think is my most common.</p> <p>MD1: Mine is complicated comorbidities for elderly care, I think that's my most common</p> <p>MD3: Yeah, most of my patients are elderly, mental health clients, with multiple medical conditions including diabetes, obesity, substance abuse. Some social problems</p> <p>MD4: So I'll say mine is about 50% who don't speak English, who we use translation for, about I'd say 15-20% are uninsured, and then the remaining 50%, sorry the 50% who do speak English, I'd say about half of them have complex mental health issues, and then I have probably about 25% who, you know, would have a (SAMI) score of 1, or something like that, would be, so that's my demographics.</p> <p>MD3: I don't, I don't know, I don't have the percentage, but the majority of my clients are from south-east Asia, East Africa, South America, and yeah and I have a large number of mental health clients, who do not want to get outside of their one bedroom apartment. Who considers just moving around their room is a kind of exercise. These are my main clients, and, yeah.</p>
<p>Physical activity as a social concept</p>	<p>MD2: I would ask them, you know, is physical activity a part of your daily life? Is it something that, you know, you do every day, or something you do, you know, to achieve certain goals, or you don't do it at all?</p> <p>MD5: Also if they find something that they enjoy doing. So if you can identify something, say, oh I used to play soccer, but I don't do that anymore, then you can try to say, oh can you find a place to do that again? And we talk about it and that sometimes works a little bit better.</p> <p>Nurse3: yeah, and what do they see as constituting physical activity...cause for some people it means going to the gym, and for others it means, gardening, right?</p> <p>Nurse3: So I usually do it from a like, 'what kind of things do you like to do', even if it's not physical, just like, what are you interested in, and then seeing, like, which of those already incorporate exercise, and they're just not recognizing it as exercise? And which things could like easily have some sort of exercise component put into it? Because, at the end of the day, people seek pleasure, right? So they're gonna want to do what's fun, what's enjoyable. And I find, again, like, it's not something that I can say with any great experience, but they usually are a little bit more interested, than just like 'well, you're probably going to have a stroke'. So, (laughter) I don't know.</p>

<p>Patients and providers may view physical activity differently</p>	<p>MD3: Yeah, and for most of our clients, most of them, most of them I would say, never exercised in their life. Most of them. Or, they had some physically demanding job from before, and they considered that as an exercise, and they don't follow up on leisure time activity</p> <p>MD4: culturally we have to identify things, and I think we see some of that in ---...I'm looking at ----- because we've had this discussion before. Some of our South Asians think breathing exercises count as exercise...and so we have to do some education as to what we mean by exercise. We mean cardio, so.</p> <p>MD1: I do a screen, and then we sit down, we discuss what is, what is good exercise what is bad exercise (laughs), not bad exercise, but what is not considered exercise, for example, I do a very challenging job at work, and though that's challenging, that's not what I'm considering as exercise.</p> <p>MD4: I would say client priorities can be a barrier. So, you know clients usually, very rarely will book an appointment to discuss exercise. And so, even smoking, they will book an appointment sometimes to discuss it, and, and that's very useful, right? Because then we have a dedicated visit for smoking cessation. And that number one it shows that they're motivated, the fact that they're doing it, and it tends to, I find it tends to be very useful to dedicate time. I don't, I can't think of one time a client has ever boked an appointment, reason for visit, to discuss exercise. So, I think that's a barrier, the fact that that's never happened. So we always have to squeeze it into another visit for another purpose.</p>
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Table 5: Experiences of Physical Activity Counseling in Practice

	Full Demonstrative Quotes
Physical activity counseling was a routine part of practice	<p>MD2: I think for me personally, I, I don't question them every single visit, but when I do a review of systems, on part of their annual physical exams, or intake process</p> <p>MD1: I do it standard with all my children and adults in their annual physical, so it's always mentioned there</p> <p>MD5: That's the same, I would do, is I would say, I know the recommendation is this, and I know given your health condition...that research shows that exercise is beneficial. Based on the recommendation, you should be doing that.</p> <p>MD4: I love what --'s saying, that -- does it for all clients, I wish I could say the same, I don't. I do it generally, I do it part of the physical and I do it then for specific, you know, disease modality, like diabetes, obesity, hypertension, and then and like I said, some of the mental health clients really benefit from it as well.</p> <p>MD1: I find there are some individuals, because of their other comorbidity, existing conditions, I speak to them regularly, almost at every visit about exercise, because I'm really trying to make a huge impact on their health status.... The ones, and there's so many of those patients that we're concerned about, that it's part of a regular visit almost.</p> <p>MD3: Yeah, for, when I say for all clients, first intake, first time...all of them, all of them, whether they have medical conditions, or young healthy physically active person, I document those things. But on follow-up it depends on their medical, yeah.</p> <p>MD3: I include physical activity in almost all of my medical problems, mental health, substance, smoking cessation programs, diabetes, weight loss, knee/joint pains, back pain. Everything includes physical activity. I print out this, only, not only for diabetic patients, for all of my, where, where I thought exercise is indicated, yeah.</p> <p>NP5: Anyway, I think physical activity is like probably daily, I discuss (physical activity?) with my clients. I think it's like, overall, I think I should try to get my clients to continue to move, you know for whatever reason, there's always a reason, right, for overall health, benefits, talking about cholesterol, hypertension, diabetes, whatever? You know, it's got multiple benefits there, and then of course stress reduction, and you know, I just, uh, um, (pretty well?) just anything, I mean it's obvious right? Overall good, good health has to incorporate activity.</p> <p>Nurse3: I feel like if we did more of the preventative counseling, um, physical activity is like, it's like healthy eating, it's like, one of the basics, right? So, I feel like it's a pretty basic topic that would be within the nurses scope of practice, it's just not something we currently do</p>

<p>Counseling not always perceived as effective</p>	<p>MD3: So what I counsel them on is, just start with walking. 10 minutes, listen to your body, go for 15, your body tells you I can walk for 30 minutes, then add a little bit more distance. Yeah, that's how, I have seen some patients benefitting on continuing talk on physical activity.</p> <p>MD4: And even some people with mild mood disorders, who are very hesitant to take SSRIs, you look at some of the, not necessarily very strong, but some of the research and show them that look, there can be some benefit to exercise. Some of them really take to that. And then some of them have benefit from it.</p> <p>MD5: But at the same time, I don't, I'm not too sure how much impact we always get. There are some people who really take your, your guidelines to heart, and the next time you see them it's amazing, it's changed everything, and they do a whole new exercise regime. And then there are other people who, yeah, I heard what you said but... even this morning a lady said Oh, I, you, I've been seeing you for 5 years, and every time you ask me if I exercise, and she's like, No! I don't exercise (laughter). So</p> <p>MD1: And how many those did we try, we didn't, you ask them to do this, this didn't work, so ok, let's try a different version, let's try a different approach, and it's just, if there was one great approach, or two great approaches, that worked with most of our patients, I'm sure we all would be doing it. But it is one of those things that we're constantly trying to find something that works well.</p> <p>NP7: I guess, I, I just keep revisiting the issue over and over again. I mean, I do have clients that really need, to, I mean physical activity would really help them, just in terms of overall health, right? But I just can't seem to get them motivated, some of them, and I just keep telling them, listen, doing your blood pressure, this is your blood pressure. Just walk two times a week, and when you come, we would see a difference, I guarantee you that, you know? So you try to kind of reinforce it, but then at the end of the day.</p>
<p>Gaps between resources and practice</p>	<p>MD4: Yes, I would say specifically it would be nice if there was something for mental health clients, as an example, to show them the benefits, number one... And then the other biggest barrier, like -- said, is people's physical limitations. And so on one hand, and I'll be honest, to me that's a, that's a real challenge I have, right? Someone comes in, they have physical limitations, they can't move a lot, but they need to move more, in some ways it's more important for them to get into a good exercise routine than, than some of my other clients. But even I have trouble guiding them as to what they should do. I don't want to make their pain worse, and so it is a bit of a struggle. Now, to be fair, that's where we use physio, sometimes I even use physiatry, so, you know, we lean on our colleagues for that. But, but that's that would be helpful, with, you know, people with... cardiovascular disease used to be challenging and then they developed the whole cardiac rehab program, right? So now they've kind of made it easy for us, go to cardiac rehab, they'll, they'll take care of that. It would be nice if we had that for some of the, you know, chronic MSK issues.</p>

	<p>MD5: So the, the amount. Something concrete, so how, for how, what type of activity and for how long, and how often. As part of the recommendation based on your counseling discussion, I think. And then, because we, we, are obviously obsessed with barriers, identifying some of the things that are barriers, so that it makes it easier to make the appropriate prescription.</p> <p>NP4: I want to have that handout, or tools, to identify which exercise can be helpful to ease their condition, or maintain their health. So, because of the many patients have a different condition, different ability to do that exercise, I can...if I give the general information, like you do 150 minutes of the exercise per week. I don't know what they do, I don't know how they do, I don't know, like, I'm not really sure they are under somebody's supervision or just do whatever they want, only walking? I don't know, what is rigorous? Do they know, do they understand? You know, like, I think that it's more help, helpful to have handout to the clients, that's what I want to have.</p> <p>MD5: And maybe even with certain barriers, some, like, a nice tool comes with, like, a kit. And so the rest of the tool also gives you some ideas of, ok so if someone says cost is a barrier, then some ideas of types of physical activity that they can do that kind of overcome the idea of cost. Or, I have knee pain or back pain, and then different types of low impact physical activity that might be reasonable to you. So then, instead of the provider having to be an expert on all these things, they might be able to just flip on the page and say, oh, you know, you can do aquafit, and go from there.</p>
<p>How far do providers engage with social factors</p>	<p>MD5: And so I, I usually ask, you know, like what kind of things do you do for exercise, usually people say "I walk", (laughter), and then that's about it, and then we talk about what other things they can do. And, and talk about barriers that they might have.</p> <p>MD4: So counseling in my mind means, getting the information, obviously is part of it, but counseling actually, you know, involves, you know, however you are going to define it but, you know, motivational interviewing is one of the techniques that we use. So if you're counseling, it's not just identifying, it's identifying, you know, discussing with a client, seeing if they agree that this is something they want to do, then identifying their barriers, making a plan. So all of that is part of counseling. Screening is what you described right? Screening is where we just ask how much are you doing? Oh, you should do more. But I think most of us do actual counseling, the way I'm defining it</p> <p>MD4: Yeah I agree, I think I would want certain barriers to be identified, and, and suggestions for those barriers. So the common ones are, socioeconomic and then the physical barriers. I would like to see that, that would be great, yeah.</p> <p>MD2: Two is the finance, a lot of our clients are on social assistance, so they are living, you know, paycheck to paycheck. And out of that paycheck you know, the have to have rent and food and clothing, and there may not be 40-50 dollars a month left to spend on goodlife fitness benefit plan or something like this. And accessibility is the other thing, is a lot of them don't drive, and may not be able to commute to clubs. And the very last thing essentially is the physical barrier, and that's essentially, you know, bad knees. Ok, I may not be able to exercise on a treadmill, but there is no pool</p>

nearby where I can swim or do other exercises. Or low back pain, or, you know, poorly controlled blood pressure, therefore they can't exercise because it's going to exacerbate it even more. So these are, sort of, some barriers. So, more, I wouldn't say more, more barriers than average, but because we deal with a very special client population, there is a little bit more, I think, barriers than I would say on average here.

Nurse2: Oh, I do know that the social workers are very...very active in that. Like giving all these resources to them. Especially for the new immigrants and the non-insured clients.

Nurse6: We, we always can touch base with social workers, so they always have those resources, even if the nursing doesn't, so

MD2: And a lot of them are new to the country so they don't even have an idea where the gym is. So for them, you know, you have to show, ok we actually have gyms here, you can go, there's a membership fee you have to pay, so forth. So it's a full spectrum of people here

MD3: Accessibility to a gym is a huge barrier for some clients I have. People who have some physical disability might benefit from going to the gym because they can use different machines depending on their physical barrier. Not everyone can go to the park and run or walk. So, joining a gym is not financially possible for most of our clients, and there are no resources in the community available for these people. I have a client who...had bariatric surgery July 2015, she lost, with physical activity, diet, surgery, she lost about 80 pounds, and she stalled. Now she's depressed. The last 3 months she did not lose anything at all, she's, she's depressed. It took us more than 3 months to get some discount from Variety Village. Look how much we spent on this woman with surgery, and involving all these teams, and not having physical activity that cost \$20.

MD5: And then some people do get into exercise programs, but the cost, like as -- was mentioning, can become a problem. So at first maybe they can go for a little bit and then they realize that they can't pay to go to the class every time. That being said, recently in their area a bunch of, kind of, lower cost gyms have been opening up, and I've noticed a bit of a difference in some of my clients, who previously couldn't afford to go to the gym, are now going to those like, you know, 10 dollars a month kind of gyms, and it's making a big difference in their activity levels.

MD5: And child care, having child care...available for people so that they could go.

Nurse2: Yeah, and like, when, when, cause I personally had experienced, so registration started at 7 o'clock, by 7:15 everything is gone, especially for those centres that are free.

NP response: It's the most horrible system, I'm telling you

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	<p>Nurse2: I wish that, because there is a move, I, I heard that there is a move that everything will be free, in time. I hope it will come sooner than later.</p> <p>NP5; free?</p> <p>Nurse2: Cause it's really helpful. There is a move that it will be free for everybody.</p> <p>NP5: Tax, a tax, yeah that would be good</p>
<p>Physical activity may not be a patient priority</p>	<p>MD2: I don't really know. It's, if, I mean, if they have a mental health issue, perhaps. I see a lot of clients with, for example, for back pain. So this simply, you know, they're either in a, in a, like with a walker or a cane or the crutches, so for them, you know, it would be really hard even to get to see me. So you have to get transportation for them. So, even things as getting their meals, you have to get meals on wheels for them. So, so these, so exercise is really not, not part of the daily routine because they have other things to worry about.</p> <p>Nurse3: They're more worried about getting to work, getting their kids fed, getting some sleep...not taking a walk around the block</p> <p>MD2: So it's, it's like a, a multiplanar problem, essentially process, but I don't have a lot of time, sort of, to spend on just exercise counseling with each patient, because, you know, when it comes to their, you know, blood pressure control, and their diabetes and their cholesterol and their mental health, and their, you know, housing and their social assistance, exercise is, although important, it's pretty, you know, it's....at the end of the day it's not as important as other things for them</p> <p>MD2: I found that I see a lot of refugees and young, young families. So women who are having babies, having lots of young children, and so these women are so busy, like they're so tired, (laughter), and, and then I tell them to exercise. And I totally understand why they're tired, and (unintelligible), it's really hard to do that. But, yeah, so I think that's one of the kind of a unique barrier in that they, you know, they they're here in a new place. A lot of times refugees with, you know, 3 under the age of 4 and trying to figure out how to do life in general, and then I'm trying to also give them this idea of doing exercise. And their job is 24 hours a day and their, they have a lot of responsibilities in the home of cooking, cleaning and doing a lot of other things, too so, it's really difficult to give that advice.</p> <p>NP7: So, I mean, that actually changed my approach in terms of, ok, before I start doing my spiel, I should get a good history about... what's, where's this client actually coming from right? So I actually do that right now, because it's not about me telling them how, what they should be doing, it's like what can they do? Right? Are they in a situation, where for most of them, who's going three times a week to get meals on wheels, I'm talking about insulin therapy. Right? So</p>

Table 6: Disciplines Responsible for Physical Activity Counseling

	Full Demonstrative Quotes
Who is responsible	<p>Nurse3: I think the reality is the provider.....does it the most. Researcher: And provider means...? Nurse3: Nurse practitioner or doctor.</p> <p>NP7: I think it's just not only nurses or nurse practitioners, I think every discipline...needs to kind of bring that, even social workers, it's a very good opportunity. Just when they're dealing with patients who come with, like, so much stress and emotional, just even taking a walk and just doing a little bit of physical activity, just even take a walk a few times a week, will help them with their emotions and their stress, and at the same time, fulfill the purpose of being physically active, right?</p> <p>Later in conversation:</p> <p>Nurse3: Um, and I think in a fantasy world it's like NP7 was saying, everyone should have their toes in that pond.</p> <p>MD4: I do agree with -- it's a shared responsibility at the end of the day, but just take it a step further, the most responsible person on the team for the client would be their primary care provider. Now not everyone we all see is there, are we their primary care provider, right? Cause we do coverage, so sometimes you're seeing someone else's client, etc, etc. So you still are responsible to bring it up in the right context, but at the end of the day I think it's their primary care provider, whoever that may be.</p> <p>MD4: Well I think the best example is what --'s given, the diabetic educators do a lot of it. You know, it's one of the areas that we are hoping to see the RNs role expand, to do some of that counseling. But it hasn't taken fruition here yet.</p> <p>MD5: I still think it's, it's kind of, my responsibility to pull together everything that's happening, from all the different team members. So as kind of a co-ordinator...as the primary care provider.... So, I might not go into as much detail if I talk to someone and they say, oh yeah the diabetes educator talked to me, and they gave me a prescription and I'm doing ----, maybe I'm not going to go through my whole counseling spiel, but I might, but then I've noted that the exercise has been addressed. They're working on this and this. So, I just, I feel like it's my job to pull all the pieces together, anyway, so. I would be responsible for that too.</p>

	<p>MD2: Well, I think it's a shared responsibility, I mean, to some degree. I may mention it, and I may, sort of, provide brief counseling, but I think, the diabetic team will be there as a reinforcement. They will be able to, sort of, reiterate the idea, and sort of, explain it, because it's much more focussed, people know that, you know, you know, they usually have diabetes because they're overweight or it's metabolic, and exercise is part of that self-change. So they're there for very specific, you know, they're there to check their weight, make sure they are checking their sugars, make sure they are exercising and eating right</p>
<p>Not part of nursing practice</p>	<p>Nurse3: just because part of the nursing scope of practice is supposed to be health promotion activities...I think that falls perfectly into it, right? It's, the idea of it is it's not supposed to be a treatment modality, it's supposed to be a preventative measure, so, I feel like if we did more of the preventative counseling, um, physical activity is like, it's like healthy eating, it's like, one of the basics, right? So, I feel like it's a pretty basic topic that would be within the nurses scope of practice, it's just not something we currently do</p> <p>Nurse3: Um, and, kind of, similar to what these girls have said, it's not something we've had the opportunity to do, over here</p> <p>Nurse2: and I've never had any chance of being involved or being a participant of this kind of, um, program</p> <p>Nurse3: I think it should be, but isn't, basically</p> <p>Nurse1: it's ah, I guess it's part of the preventative health care, for me, um so uh (pause), I don't think it's widely used in nursing, to be honest with you. If any, if it's used at all</p> <p>Nurse2: Yeah, we did try sometimes, if we have the time...to integrate physical activity counseling to our clients, but with limited time to see clients, prior to seeing the providers, then that's the hindrance to what we are supposed to be doing to</p>
<p>Structural limitations – task based, no appointments,</p>	<p>Nurse3: usually their time with the nurse is very task based</p> <p>Nurse6: Right, because our time is so limited with the clients.....but it's not, like a full session where they, get to spend time with a nurse</p> <p>NP7: I think we are fortunate in that sense, because our encounters are such that we see our patients, like, on one-to-one, and when we try to...especially when, if they come with like chronic disease management, and things, then physical activity becomes a big part of that, right?</p>

	<p>NP7: I was an RN for 8 years, and NP for 4 years. And, uh, a major part of the NP role also comprises of education and counseling, and, uh, so before that I was in diabetes, I am a diabetes educator as well...I'm glad that we do get the time and chance to be able to give that kind of little pep talk and encouragement to our patients</p> <p>Nurse6: In terms of physical activity counseling, I would just say, just in my past experience, just after a surgery working closely with OTs. But other than that, we haven't done any programming for, you know, physical activity counseling, at least at primary care.</p> <p>Researcher: Ok, um, and do you find that that's changed over time, in terms of who's involved? Or has it stayed pretty much the same?</p> <p>Nurse6: I think it stays pretty much the same.</p> <p>Nurse3; And acceptance of that as part of our role, too, right? Like.</p>
<p>Providers views on the requirements of training</p>	<p>Nurse2: I think training is the priority...</p> <p>Nurse6: Probably someone, like a, I think someone coming in to show us how to do things. Or, you know, or like an online resource place where we can access some online training, if that's, if we can't leave the premises, or if it's difficult, so</p> <p>Nurse1: So, so, like, if you do it properly, you should receive a training. It's not just saying, "oh, you should walk".</p> <p>MD4: But there was very little training on how to counsel, how to counsel, period. And then how to counsel specific to physical activity. So I think most of what I have done now, it's stuff I've learned on my own. So, I try to adapt, you know, you know, techniques that we've used in other areas like smoking cessation, addictions counseling, etc, etc. We've tried to adapt that. But I don't think I've received any direct training in physical activity counseling.</p> <p>MD5: When we did the family practice boards, they had a list of different topics that could be part of the boards, and I think, I think, physical activity was on there. And (unintelligible, cough)...so we knew the current guidelines, and what, what's the recommended amount of activity, and why, and the background. So that, that part's been done, and we also talk, talked a lot about motivational interviewing, and different techniques for counseling, in residency.</p> <p>MD1: I think, there's, but not that physical exercise counseling is one of many areas of medicine that we find that same occurrence, so it's almost expected that your training is more in some of the more complicated issues, and that you are expected to understand this and do this, but not a lot is, of training actually occurs for it. And that you are expected to find your way through.</p>

	<p>MD3: And you open any medical textbooks and every page talks about exercise, but not in detail, so you figure out that this is something good, and you know it in your own personal experience, that there is a benefit to this. And there are different pieces of information almost everywhere, then you come up with your own way of tackling the problem.</p>
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