

Factors Affecting Rural Women's Involvement in Physical Activity in Ghana

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Abstract

A qualitative study approach was used to explore the factors affecting rural women's involvement in physical activity in Ghana. Most of the prior research has been done in African urban areas thus, neglecting the rural areas. Purposive sampling and semi-structured interviews were used to gather data from nine women aged 40-60 years living in three rural areas in central region of Ghana. The interviews were conducted by phone, translated and transcribed, and then coded using the NVivo software package. The constant comparative method was used to analyze the data. The data presented eight enablers and five barriers to physical activity involvement for rural Ghanaian women. The study adds to the state of knowledge about rural women's physical activity across the lifespan from childhood through middle age. Findings revealed that rural women get a fair amount of physical activity from their traditional occupation, household chores, and communal labour but they lack access to and participation in organized sports or physical activity. Finally, recommendations are suggested to remove barriers to women's participation in organized physical activity and sports in rural settings.

Keywords: lifespan, physical activity, qualitative research, rural, sport

Dedication

I dedicate this thesis to my late mother, Salomey Sarfo, who nurtured me with empathy and encouraged me to fight for my dreams. You are gone, but not forgotten.

Acknowledgement

First and foremost, thanks be to God, the Almighty, for His protection throughout my research work.

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Table of Contents

Abstract.....	ii
Dedication.....	iii
Acknowledgement.....	iv
List of Tables.....	vii
List of Figures.....	vii
Chapter One - Introduction.....	2
<i>Background of the Researcher</i>	4
<i>Purpose of the Study</i>	7
<i>Research Questions</i>	7
<i>Theoretical Framework: Ecological model of health behaviour</i>	8
Chapter Two - Literature Review.....	13
<i>The Barriers to and enablers of Physical Activity</i>	14
<i>Physical Activity Patterns and Perceptions of Urban and Rural Habitats</i>	19
<i>Combining Factors which Influence Physical Activity with the Ecological Model of Health Behaviour</i>	21
Intrapersonal/Individual Factors.....	21
Interpersonal Factors.....	23
Institutional Factors.....	24
Community Factors.....	27
Public Policy.....	28
Chapter Three - Methodology.....	33
<i>Research Design</i>	33
<i>Sample and Sampling Procedures</i>	33
Participants Details.....	34
<i>Data Collection and Analysis Procedures</i>	37
<i>Credibility and Trustworthiness</i>	39
Chapter Four - Findings.....	41
<i>Enablers and Barriers that Shape the Participation of Rural Ghanaian Women in Physical Activity</i>	41
Enablers.....	41
Barriers.....	54
Chapter Five - Discussion.....	64
<i>Themes</i>	64
Life Cycle and Physical Activity Involvement.....	64
The Role of Community in Providing Physical Activity Avenues.....	68
The Role of Religious Groups in Promoting Physical Activity Involvement.....	70
How Organized Physical Activity can be Established and Maintained.....	71

The Relevance of the Ecological Model to my Study.....	74
<i>Limitations</i>	77
The Influence of COVID-19	77
The Sample.....	78
The Language of Data Collection	78
Lack of Previous Studies.....	79
<i>Recommendations for Physical Activity Programming in Rural Ghana</i>	79
<i>Future Research</i>	80
<i>Conclusion</i>	81
Appendix A - Participant Recruiting Announcement.....	98
Appendix B – Ethics Approval.....	100
Appendix C – Permission Letter.....	101
Appendix D – Approval Message.....	103
Appendix E - Informed Consent Form and Process	104
Appendix F - Interview Guide	109

List of Tables

Table 1. A model for promoting leisure-time physical activity among rural South African adolescent girls (Kinsman et al., 2015).	17
Table 2: A table of factors that influence women’s physical activity participation within the levels of ecological model.....	30
Table 3: A table of the demographics of my participants.	36

List of Figures

Figure 1: Adapted from McLeroy et al. (1988).	10
Figure 2: A model of enablers and barriers to physical activity participation (2021).	77

Chapter One - Introduction

The World Health Organization (WHO) estimates that 31% of the global population does not engage in thirty minutes of moderately intensive physical activity for at least five days a week (WHO, 2008). As a result, the WHO recognized physical activity among the global health priorities of the 21st century. WHO (2018) defines physical activity as “any bodily movement produced by skeletal muscles that require energy expenditure including activities undertaken while working, playing, carrying out household chores, traveling, and engaging in recreational pursuits” (n.p.). According to WHO (2018), popular ways to be active include walking, cycling, sports, and other recreational activities, which can be done at any level of skill and enjoyment. They further stated that physical activity can result in general health benefits such as improved muscular and cardiorespiratory fitness, bone health, weight control, and a reduction of hypertension, stroke, and some forms of cancer.

Opposite to these benefits, when women lack adequate physical activity, they are at an increased risk for obesity and developing chronic disease such as coronary heart disease, certain cancers, Type 2 diabetes, and others (Tuakli-Wosornu et al., 2014). Research indicates that obesity is on the rise in Ghana. Wegmüller et al. (2020) estimated that 24.7% of Ghanaian women are overweight and 14.3% are obese, and that these women are more likely to be wealthier, older, and urban. Similarly, Amoah (2003) and Biritwum et al. (2005) found that obesity was more common among women and urban dwellers than in male and rural habitants in Ghana. In addition, obesity was found to increase with age up to 64 years (Amoah, 2003). People who did not engage in leisure-time physical activity were more obese than those who had three or more sessions in a week (Amoah, 2003). Lack of physical

activity can contribute to obesity (Amoah, 2003; Biritwum et al., 2005). Minicuci et al. (2014) also found a relationship between low physical activity and obesity in Ghana. They suggested that low physical activity and obesity increased with advancing age. An epidemiology study by Milton et al. (2014) on the benefits of physical activity showed that people living in low-income settings, such as the rural areas of Ghana benefited from increased physical activity as much as those living in high-income settings such as big cities and towns. It is, therefore, imperative to also assess the involvement of rural poor populations in physical activity because they are also predisposed to the health effects associated with the lack of physical activity.

Rather, rural populations tend to inadvertently exercise through physical labor and manual activities (Mogre et al., 2012). For example, in Ghana, many rural peasant farmers still use manual labor to till, weed, and harvest their crops. Children also walk for relatively long distances on their way to school and women look after their families; hence, they engage in physical activities related to household chores. Some women also engage in peasant farming. This unintentional (i.e., work-based) physical activity that the rural populations in Ghana engage in is gradually becoming rarer because of rising incomes and the infiltration of urban culture into rural areas (Assah et al., 2011). Commercial farming in the rural areas is now mostly mechanized and human-powered transportation has been reduced due to the availability of motorbikes as the dominant form of rural transportation for households (Cossar et al., 2016; Taiwo & Kumi, 2015).

The focus of this study was to explore factors affecting rural women's involvement in physical activity in Ghana. Scholars and researchers often focus on physical activity as a priority in their work because they consider it one of the preventive measures to reduce the

incidence of non-communicable diseases (WHO, 2018). However, much of this past research has focused on urban settings and the general population in Ghana (Balis et al., 2019; Tuakli-Wosornu et al., 2014). After conducting a thorough research review, the researcher realized that there is an absence of studies conducted in Ghana that have highlighted rural populations and specific demographic groups such as women, girls, or youth.

This present study employed an exploratory qualitative design to investigate the factors affecting the involvement of Ghanaian women in physical activity. Studies continue to show that women are a high-risk demographic when it comes to sedentary lifestyles (Baruth et al., 2013; Healy et al., 2011); hence, physical activity needs to be encouraged in women's everyday lives in rural areas. Although urban areas in Ghana are often the hardest hit when it comes to lack of involvement in physical activity, the problem has spread to the rural areas, and therefore, there are factors behind this recent phenomenon that need to be explored (Balis et al., 2019; Tuakli-Wosornu et al., 2014).

Background of the Researcher

I was born in the Central Region in Enyan Nsawadze, and then, I was raised in Ajumako-Mando. These are all in the Ajumako Enyan Essiam District (AEED) of the country. Traditionally, I hail from Ajumako-Mando. Fante is my mother tongue and I learnt English in school. I am an Akan, and we hail from our mother's hometown. My dad is from Enyan Nsawadze. Due to my parent's separation, my siblings and I spent our lives moving from my dad's hometown to my mom's village and back all the time. The main occupation of the people in my district is farming. Each day, most people would walk over eight

kilometres to their farms. When returning, they would carry heavy loads of food crops to feed their families and firewood to sell. My dad had a vast farm of oranges, pineapples, and cassava. When it was harvest time, we would abandon school attendance to bring in these crops. It took us weeks to complete the harvest and then return to school. My mom was a trader. Often those who do not work on the farm engage in trading. As a result, you will see women carrying heavy loads of foodstuffs from the farm to sell. When possible, I took some of my mother's items to sell after school and on weekends. Most rural areas in my country follow the same pattern.

The only physical activity that adults in these two villages engage in is what they do in their day-to-day work. The only time you will see adults involved in any organized physical activity is during my hometown's annual festival, which is held starting from the first Tuesday of August. One week is devoted to the festival during which there are various activities such as, durbar day, jogging, cross country competition (running event), harvest, and auction. Healthy cooking competitions and a beauty pageant are festival activities exclusively for women. People from my hometown who have migrated to other places for better lives will travel back home for this celebration.

Growing up, I was always with my brothers. They introduced me to active play. I was usually seen running around, playing soccer, pilolo¹, and volleyball. I learned how to play soccer from my siblings, and this method of learning the sport is the case for most children in rural areas. In Ghana, primary and junior high schools lack qualified Physical

¹ This is when people go into hiding while the organizer of the activity hides sticks, and the participants are to come out of their hiding to search for the sticks. Whenever, someone finds the sticks, he or she is supposed to pick one, run to a designated distance, and back to accumulate marks

Education teachers, so one can only be recruited into the school's sport team if you already know how to play that sport.

I had all my schooling in the Central Region. I completed primary and junior high school at two different schools, both in the AEED. The primary school was a government school and the junior high school a private. I attended senior high school in a town that had more municipal facilities than typical of rural settings. My Physical Education teacher inspired me to study Physical Education at a higher level. She was passionate and dedicated to physical activity. She encouraged me not to allow people to limit me because of my gender. Thus, after graduating from high school, I pursued a degree in Health, Physical Education, and Recreation. Finally, I received my undergraduate degree from a university located in the capital city of the Central Region. After university, I taught Physical Education in a high school in Ghana. Some of my responsibilities included organizing games for the entire school to encourage the girls to participate in diverse sports such as soccer, volleyball, handball, athletics, and swimming.

When I was a girl, the town folks changed my local name from Abii to "Abiboy" because of my activeness, which in hindsight, suggests that they saw me playing "as or like a boy." They may have perceived me as a boy or male because, traditionally in my country, it was only boys who engaged in those types of physical activities.

During my undergraduate studies, I often went jogging in the morning anytime I came home for vacations. The many folks who were up early and going about their activities would stop their chores and stare at me until I was out of sight. They would stare at me because it is rare to see anybody jogging and extremely rare to see a woman jog. There is

just one man who also jogs in my hometown, and he does this because he was into active soccer at his younger age.

I chose to do this research because I lived more than half of my life in a rural area in Ghana, was involved in sports from childhood, and want to utilize my knowledge of physical education and physical activity. During my initial coursework for my Master's degree, I realized that not everyone (especially older women) had access to physical activity in the way that I did. As women in the rural areas begin to lose their involvement in occupational farming and household chores, they become more at risk of developing chronic diseases. I wanted to contribute to women's health and wellbeing and understand this trend to assist policy makers. With a greater understanding of rural women's lives in relation to physical activity, they can be introduced to other forms of physical activity to engage in as they approach old age and lose their involvement in their occupational farming and household chores. In conducting this research, I hope to contribute to this understanding.

Purpose of the Study

This exploratory research aimed to explore the factors that affect rural women's involvement in physical activity in Ghana. The study focused on rural women between 40-60 years of age in Ghana. There have been two previous studies of women's physical activity in Ghana (Balis et al., 2019; Tuakli-Wosornu et al., 2014) conducted in urban settings, but there is a dearth of research that explores women's experiences with physical activity in rural settings.

Research Questions

The following research question guided the study:

What are the factors which influence rural women's involvement in physical activity?

The following sub-questions helped focus the study:

1. What are the barriers and enablers that shape the participation of Ghanaian rural women in physical activity?
2. How do the factors identified above intersect with poverty, gender, and home lifestyle to affect the involvement of Ghanaian rural women in physical activity?
3. How can the factors identified as barriers to physical activity be navigated, removed, or progressively turned into enablers of physical activity?

Theoretical Framework: Ecological model of health behaviour

The ecological model of health behaviour developed by McLeroy et al. (1988) and Sallis et al. (2008) is the theoretical framework that guided my research. Sallis et al. (2008) stated that "the core concept of ecological model is that behaviour has multiple levels of influences, often including intrapersonal (biological, psychological), interpersonal (society and cultural) organization, community, physical environment and policy" (p. 466). McLeroy et al. (1988) developed the ecological model of health behaviour through their research on ecological perspectives of health promotion programs. They suggested that both individuals and their social environments should be targeted for health promotion interventions. They referenced Urie Bronfenbrenner's (1980's) ecological model, which identified that multiple systems of influences impact a child's development. These researchers then made variations

to the ecological model and theorized five levels of influences on behaviour (Rural Health Information Hub, 2020). The levels are:

1. Intrapersonal/individual factors - these are characteristics that influence behaviours. Examples are demographics, experiences, knowledge, attitudes, self-concepts, skills, personality, and beliefs. These factors lead individuals to be physically active (or not). For example, being taught sports skills or literacy as a child can influence comfort and willingness to engage in physical activity throughout the lifespan.
2. Interpersonal factors - these are formal or informal social networks or support systems, like the workgroup, family, culture, peers. These groups can provide a social support system or create barriers to interpersonal growth that promotes healthy behaviour. For example, having a group of friends who engage in physical activity can influence your physical activity involvement.
3. Institutional factors - these are social institutions with organizational characteristics, and formal (informal) rules and regulations. Examples of such institutions are workplaces, schools, churches, or mosques. These regulations or policies can directly or indirectly promote or constrain healthy behaviours. For instance, a school with physical education allocated on the timetable can help students develop physical activity habits.
4. Community factors - they are the formal or informal relationships that exist among individuals, organizations, institutions. The relationships that exist among these bodies enhance or limit healthy behaviours. For example, when a

community has easy access to recreational centers, parks, and safe places to walk or facilities to engage in physical activity.

5. Public policy - when there are town, district, regional, and national policies to help regulate or support health actions and practices for physical activity engagement. For instance, there could be a policy that allows the general public to access the recreational spaces for schools.

The model designed by McLeroy and colleagues is shown below in Fig 1.

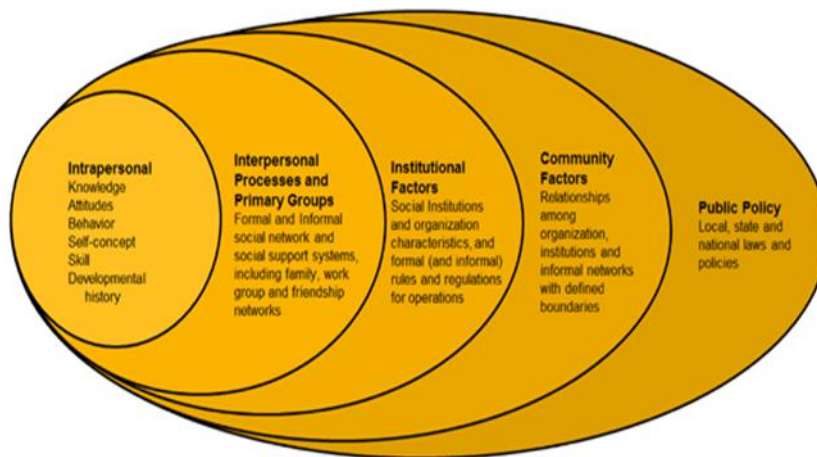


Figure 1: Adapted from McLeroy et al. (1988).

Sallis et al. (2008) developed four core principles of ecological models of health behaviour.

1. There are multiple influences of specific health behaviours, including factors at the interpersonal, organizational, community, and public policy,
2. Influences on behaviours interact across those different levels,
3. The ecological model should be behaviour-specific, identifying the most relevant potential influence at each level and,
4. Multi-level interventions should be most effective in changing behaviour (p.466).

According to Rural Health Information (2020), the ecological perspective is an essential framework because it helps understand the range of factors that influence wellbeing. The model also helps to identify opportunities to promote physical activity by recognizing an individual's gender, beliefs, culture, attitudes, behaviour (sedentary and active), and social environment (availability of physical activity equipment and facilities), as well as other factors that may influence one's ability to be sufficiently physically active. Lastly, health and fitness professionals can use the ecological model to help individuals succeed by studying their barriers to and facilitators of physical activity and help them attain their goals.

The ecological model of health behaviour has been used in a few studies on physical activity (Marconnot et al., 2019; Skowron et al., 2008); however, I could not find any researchers who have utilized it studies situated in the African context. Skowron et al. (2008) used the ecological model to examine attitudes, social support, and constraints affecting physical activity participation among Latina women in the US. They found that social support for Leisure-Time Physical Activity (LTPA) and constraints such as lack of child-care and lack of social support were significant predictors of LTPA participation. Some women reported cultural constraints such as family orientation, and most married women mentioned support from their spouses.

Kumanyika et al. (2007) mentioned the need for ecological model that is inclusive of important contextual variables to arrive at effective and sustainable solutions to obesity. LaVoi and Dutove (2012) used various ecological system models in their work on barriers and supports for female coaches. They cited the health-related behaviours ecological system by Sallis et al. (2008) when they discussed the physical activity level of the female coaches.

Recently, the ecological levels were used by Marconnot et al. (2019) when performing a thematic analysis on their data. The purpose of their study was to describe the barriers that existed for the promotion of physical activity among immigrant children in Spain. The findings revealed barriers such as the meaning of physical activity, gender inequalities, lack of social contact, lack of infrastructure and nature, fear, and insecurities.

The ecological model appeared to be the best theoretical model for the current study because it identified the relationships between the various levels of influence (interpersonal, intrapersonal, community, institutions, and public policy) (Lohrmann, 2008). I believe that women are nested within these levels of influences and relationships with the levels. The ecological model, first developed in 1988, is still relevant today.

The following chapter reviews the literature on the barriers to and enablers of physical activity, the outcomes and influences of sedentary behaviour, and physical activity patterns and perceptions of urban and rural habitats.

Chapter Two - Literature Review

In this literature review, I will present research exploring physical activity as a lifestyle problem. Given the current dearth of research on women and physical activity in Ghana, literature focusing on urban and rural areas in sub-Saharan Africa was used as a proxy since most African rural settings have similar factors related to physical activity due to a predominantly agrarian culture throughout the continent. Given massive cultural change and urbanization, it is imperative that we understand more about the physical activity patterns of women living in rural areas.

I started my literature review using the following search terms in Google Scholar: Ghana, women, and physical activity. Following this, I changed tactics and broadened my search by using the same terms plus "Sub-Saharan Africa." When considering my theoretical framework, I retrieved articles that examined the multitude of influences on health behaviour and found the ecological model. I proceeded to search for physical activity articles worldwide that used the ecological model as their framework. Finally, I searched for enablers and barriers to physical activity by using Google scholar.

I retrieved a total of 500 articles and conference notes, spanning publication dates from 1998 to 2020. I chose 98 articles to review as they were most relevant to the research because they specifically addressed women's physical activity, physical activity in Ghana, and sub-Saharan Africa, facilitators and barriers to physical activity, and the ecological model of health behaviour. Articles that had little or no content on those topics were excluded. Both qualitative and quantitative studies were considered.

Influenced by my theoretical framework, this literature review is organized in three sections: The barriers to and facilitators of physical activity, physical activity patterns and perceptions of urban and rural habitats. Finally, I will combine and discuss some literature relating to physical activity within the levels of the ecological models.

The Barriers to and enablers of Physical Activity

This section will outline barriers and enablers of physical activity found in Ghana, Africa, and beyond. For example, a study by Bethancourt et al. (2014) in the US found that a lack of professional guidance and inadequate distribution of information as barriers to physical activity for women. They also concluded that motivation to maintain physical activity and mental health and access to affordable physical activity options are enablers of physical activity. Benjamin and Donnelly (2013) found lack of time, health status, traditional roles for women, lack of social support, use of housemaids, hot weather, and lack of exercise enablers as barriers for women in Arab and a desire to have slimmer bodies, having social support, and the Muslim religion as enablers of physical activity. Other researchers like Deshpande et al. (2009) and Dishman et al. (1985) reported that adults over the age of 80 did not engage in physical activity because they were afraid to fall, they did not get social support, they lacked the interest to exercise, and that there was the lack of infrastructure in their communities. Allender et al. (2006) also mentioned insufficient guidance and a lack of role models as barriers to physical activity. On the other hand, Baert et al. (2011) discussed that a sense of achievement, network support, and health benefits are some enablers of physical activity. Three research studies completed in the African context will be reviewed in depth below.

Aikins et al. (2014) reviewed the socio-cultural and socio-economic context of Africa's chronic disease burden. They reported a connection between culture and physical exercise. Considering that similar cultural cues likely influence the degree of physical activity of Ghana's rural women, these findings are worth exploring. Interestingly, Aikins et al. (2014) also found that in Pan-African settings physical activity levels are linked to occupation. Rural farmers, they assert, engage in strenuous physical activity as part of their daily work. They also found that some women living in urban areas in Africa have physical activity as part of their working lives in occupations such as street hawking, domestic servitude, or manual labour. According to these researchers, available data on physical activity makes rural-urban distinctions as well as distinctions between high physical activity among informal sector workers and low physical activity among salaried sedentary workers in urban areas. Based on the data presented, the urban poor was less likely to be engaged in physical activity. Ghanaian women fell into the category of under-resourced, thereby deprived of organized opportunities to exercise.

In a related study, Kinsman et al. (2015) examined factors that affect physical activity in rural South African adolescent girls. Their research was conducted in three senior high schools. They hosted six focus group discussions with 51 adolescent girls from the schools and conducted seven interviews with sports teachers and youth leaders (six men and one woman). They found that three factors were associated with the girls' level of physical activity: body image, poverty, and gender. An individual's body image can influence her willingness to participate in physical activity. The authors noted that girls, who see themselves as obese, may want to participate in sports and physical activity to reduce their size to attract boys.

Additionally, Kinsman et al. (2015) reported that poverty could be either a facilitator or a barrier. Some students from poor backgrounds, wanted to engage in competitive sports to gain scholarships, and on other occasions, they shied away from sports when there were students from richer families present. Most schools' sporting facilities are used by boys and it can be difficult for girls to access these facilities. The researchers also mentioned that, overall, participants reported more barriers to physical activity than enablers. This suggests that students living in rural areas may have little chance of engaging in physical activity. Further, girls were less likely than boys to have access to organized physical activity programs in rural areas due to cultural factors such as girls' roles being perceived to be in the kitchen. Finally, they provided insight for the current study because some of the same factors could be present in rural Ghana.

Kinsman et al. (2015) concluded their analysis of the barriers to South African girls' involvement in physical activity with different themes. The themes were used to create a model that comprises remedial actions aimed at promoting meaningful physical activity. The model (Table 1) depicts a series of action points (supply-side perspective and demand-side perspective) designed to promote leisure time activity for South African girls living in rural areas. On the supply-side, suggestions included the creation of courses and training for organizations, schools, and the individuals which facilitate the activities. The demand-side perspective focused on the development of empowering messages about body images for teenage girls and encouraged more parental involvement. They believe that providing a physical activity intervention that embodies this supply-and-demand-side model will help tackle non-communicable diseases in South Africa. Like rural South Africa, Ghana's rural areas are resource-poor; hence, less likely to encourage a culture of physical activity.

Table 1. A model for promoting leisure-time physical activity among rural South African adolescent girls (Kinsman et al., 2015).

Addressing the supply side	Addressing the demand side
Increase resources for acquiring and maintaining equipment and facilities	Develop empowering messages about healthy weight and body image
Provide training and support for youth leaders and sports teachers	Make it fun
Promote female role models as youth leaders and sports teachers	Provide incentives on a conditional transfer cash principle
Promote girls-only activities, for ALL girls	Encourage parental engagement
Work towards sustainability	Design appropriate accompanying health message

Cultural factors also affected the possibility that a woman in an African setting will be engaged in some meaningful physical activity. Dake et al. (2010) conducted a cross-cultural inquiry in Ghana that compared physical activity in urban and rural areas. They found obesity as a correlate of lack of physical activity. They also learned that being fat in the African context is a mark of beauty for African women. Hence, being married is often associated with obesity because the society in both rural and urban Ghana does not view being overweight and obese in a negative light or in the context of the disease risk it may pose. Men saw fat women as beautiful, so there is no incentive to slim down. Their study reported that this trend was changing gradually with increasing urbanization because more people have access to health information that suggests that excess weight can lead to chronic diseases. However, the fact that rural women engage in many varieties of manual labor, such as weeding or walking for long distances, does not overshadow the fact that they do not participate in systematic and organized physical activity. In addition to culture, Dake et al.

(2010) further associated the level of education with the possibility of urban women engaging in physical activity. In their study, women with more education tended to exercise more to lose weight because they knew the health benefits of physical activity. The women with less education viewed physical exercise as athletic; hence, not part of their essential lifestyles.

A sedentary lifestyle is when an individual does little or no physical activity and are often sitting or lying down. In recent times, the individual could be using their phone or watching television (TV). Sedentary behaviour is likely to contribute to ill health (Physical Activity Guidance Advisory Committee Scientific Report, 2018). Many women suffer from non-communicable diseases such as diabetes, stroke, breast cancer and heart diseases due to lack of physical activity (WHO, 2019). Trembley et al. (2010) also reported on the physiological and health implications of a sedentary lifestyle. TV watching contributes to a sedentary lifestyle and has been reported to increase the risk of type 2 diabetes in adults (Hu et al., 2001, 2003). Similarly, in Ghana, a study by Tuoyire (2018) found that women with TVs in their households and with high TV exposure were significantly more likely to be obese compared to those with no TV in their households.

Micklesfield et al. (2014) studied physical activity and sedentary behaviour among adolescents in rural South Africa. They examined physical activity and sedentary behaviour patterns and probed circumstances such as, maternal, household, and community factors amongst rural South African adolescents. A key finding was that rural boys and girls with low socioeconomic status in their maternal home had a less sedentary lifestyle because they used walking more often for transportation; however, they had lower moderate-vigorous physical activity in school and clubs. This means that if a child is going to walk home after

school, it is unlikely that this child will engage in any after-school sporting events because they are bound to walk home late.

Physical Activity Patterns and Perceptions of Urban and Rural Habitats

This section discusses how physical activity is perceived, followed, recognized, and acknowledged in the rural and urban areas. It also compares the prevalence of some chronic diseases in urban versus rural settings. Sobngwi et al. (2002) found a relationship between physical activity and obesity, hypertension, and diabetes in urban and rural Cameroonians. They evaluated and compared physical activity patterns of urban and rural habitants and obesity, diabetes, and hypertension rates. They found out that hypertension was higher in women than in men, and it was higher in urban women than rural women. Also, urban dwellers had lower levels of physical activity and lighter occupational physical activity than rural dwellers. Finally, the researchers concluded that obesity, diabetes, and hypertension prevalence is higher in urban habitants compared to rural ones. With the increase in urbanization and mechanization in Ghana resulting in lowered physical activity levels, rural women may soon follow this trend toward hypertension and diabetes due to reduced physical activity.

A study was carried out by Balis et al. (2019) on older Ghanaian adults' perceptions of physical activity. Their sample was limited to urban dwellers. They found out that older women in Ghana are interested in and want to participate in physical activity. Still, they lack the necessary knowledge and skills to actually access these opportunities. Lastly, they found that older Ghanaians considered participation in physical activity because it was recommended by their health care providers.

Tuakli-Wosornu et al. (2014) are among the authors whose work specifically targets Ghana. They conducted a pilot case study using a mixed-methods approach exploring the preliminary association between the perceptions of physical activity, health, and physical activity behaviours as factors that affect the involvement of Ghanaian women in physical activity. The researchers used a convenience sample for a self-administered questionnaire and focus group discussion. As pointed out earlier, these factors are increasingly present in rural settings, and they affect the extent to which rural women reported physical activity an essential aspect of their lifestyle. Participants described their physical activity occurring solely within the context of their daily activities, such as housework. Thus, they rarely utilized systematic physical activities such as organized gym time or a morning jog around the neighbourhood.

Some of the women perceived physical activity as a form of male professional athleticism (Tuakli-Wosornu et al., 2014); hence, they only took an interest in adult group physical activity. The significant finding in this research is that most of the respondents indicated a lack of enough exposure to meaningful physical activity. The reason was that they either “cannot find the time” due to work and family obligations, or they “do not have a facility.” These were identified as the top barriers to physical activity. They concluded that motivators of physical activity in urban Ghanaian women are related to their perceptions about it, behaviours, and health reasons. These factors are peripherally related to the ones examined for rural Ghanaian women because they are relevant in designing a fitness program that fits rural cultural orientations.

Combining Factors which Influence Physical Activity with the Ecological Model of Health Behaviour

The last section of the literature review examines physical activity within the five levels of the ecological models.

Intrapersonal/Individual Factors

Intrapersonal factors are individual characteristics that influence behaviours (Rural Health Information Hub, 2020). Examples include demographics, experiences, knowledge, attitudes, self-concepts, skills, personality, and beliefs. These factors lead individuals to be physically active (or not). Pitanga et al. (2016) suggested using the ecological model to encourage physical activity in the most vulnerable groups, such as men and women with lower education levels and lower family incomes.

Studies done in the United States (US) with women found the presence of barriers such as fatigue, ill health, lack of energy and self-consciousness about appearance as important predictors of physical activity (Brownson et al., 2000; King et al., 2000; Wilcox et al., 2000). Allender et al. (2006) also determined that insufficient guidance and a lack of role models were barriers to physical activity. Some researchers found older adults experienced physical problems such as physical weakness, respiratory problems, and lack of energy as barriers to physical activity (Gillette et al., 2015; Simmonds et al., 2016; Welmer et al., 2012). Time constraints have also been identified as barriers to physical activity among older adults. (Costello et al., 2011; Eronen et al., 2014; Nadri et al., 2016; Thornton et al., 2016). Finally, some elderlies do not engage in physical activity due to their fear of falling (Chippendale & Boltz, 2015; Salehi et al., 2010; Shiraly et al., 2017).

On the other hand, Baert et al. (2011) suggested that a sense of achievement and health benefits are some enablers of physical activity. Socioeconomic status, occupational status, and educational level also influence an individual's ability to participate in physical activity (Bozionelos & Bennett, 1999; Brownson et al., 2000; King et al., 2000).

Improvement of physical condition such as enhanced balance, reduced muscle pain, improved sleep, increased walking ability, and strengthened muscles motivate older adults to engage in physical activity (De Groot & Fagerström, 2011; Macniven et al., 2014; Nejati et al., 2010). Adults also engage in physical activity because of the joy it brings (Horne et al., 2012; Miller & Brown, 2017; Sharifian, 2014). Psychological benefits such as stress relief, having positive perceptions of physical activity, having a positive self-image, relief from depression, and improved sleep are also motivators of physical activity among older adults (Bird et al., 2009; Nadri et al., 2016; Simmonds et al., 2016).

Bauman et al. (2012) mentioned that age, education level, ethnic origin, perceived effort, being male, or overweight were reported as correlates of physical activity but were not determinants. The author added that adults engaged in physical activity because of health status and self-efficacy. Urban women in Ghana are motivated to participate in physical activity because of their perceptions about it and health reasons (Tuakli-Wosornu et al., 2014).

In a study with rural South African adolescent girls, Kinsman et al. (2015) found that factors such as body image, poverty, and gender were associated with the girls' level of physical activity. An individual's body image can influence her willingness to participate in physical activity. Additionally, they reported that poverty could be either an enabler or a barrier.

In Australia and the US, men have higher participation levels in physical activity than women (Booth et al., 2000; Brownson et al., 2000; King et al., 2000). Some women solely engage in adult group physical activity because they perceived physical activity as a form of male professional athleticism (Tuakli-Wosornu et al., 2014).

Interpersonal Factors

Interpersonal factors are formal or informal social networks or support systems, like the workgroup, family, culture, and peers (Rural Health Information Hub, 2020). These groups can provide a social support system or create barriers to interpersonal growth that promotes healthy behaviour. According to Kowal and Fortier (2007) and Khalili et al. (2015) middle age and older women found having no companion as a major barrier to physical activity. Macniven et al. (2014) also mentioned that family responsibilities such as taking care of sick children, people at home, and grandchildren are barriers to physical activity. In South Africa, in terms of cultural norms, Kinsman et al. (2015) found that girls are less likely than boys to be exposed to organized physical activity programs in rural areas due to cultural factors such as girls' roles being perceived to be in the kitchen. Circumstances such as maternal and household factors can determine the sedentary patterns amongst rural adolescents (Micklesfield et al., 2014).

Several researchers have reported a significant relationship between physical activity and social support (Booth et al., 2000; Courneya et al., 2000; Wendel-Vos et al., 2007). Women with social support were found to engage in physical activity for 30 minutes five days a week or more as compared to women with low social support (Eyler et al., 1999). A study by Booth et al. (2000) suggested that having friends who frequently participated in

physical activity influenced individuals to engage in regular physical activity. Downie et al. (2008) also suggested that social interactions during physical activity could be seen to be more positive if the behaviour is perceived as fun and enjoyable, for instance walking with friends and engaging in team sports. Social interactions such as communicating with friends, peer support, exercising with friends, and companion for walking also motivate engagement in physical activity (Van Holle et al., 2015; Yi et al., 2016; Yoo & Kim, 2017). Seeing others exercise whilst exercising and frequently observing others exercising in your neighbourhood also has shown to have a positive impact on physical activity (King et al., 2000; Thøgersen-Ntoumani, 2009). Other researchers have mentioned that adults perceive the supervision of health professionals as motivators of physical activity (Cohen-Mansfield et al., 2004; Patel et al., 2013). In Greek collectivist cultures, older adults perceived social factors as a particularly important predictor of physical activity intentions and behaviours (Thøgersen-Ntoumani, 2009). In summary, feeling a sense of competence or positive effect while engaging in physical activity comes as a result of positive social interaction (Dunton et al., 2009).

Institutional Factors

Institutional factors are social institutions with organizational characteristics, and formal (informal) rules and regulations (Rural Health Information Hub, 2020). Examples of such institutions are workplaces, schools, churches, or mosques. These regulations or policies can directly or indirectly promote or constrain healthy behaviours. For example, a school with physical education allocated on the timetable can help students develop physical activity habits.

A study by Webster and Suzuki (2014) on physical activity opportunities for school children in Japan used the ecological perspective. The research was conducted in five public schools in the suburban Japan. They identified the various instances where school children had the opportunities to engage in physical activities. School children engaged in physical activity during breaks, before classes commenced, at recess, and during physical education periods. They engaged in activities like jumping ropes, playing ball games, running around, climbing, and swinging on metal bars. The researchers also realized that lunch time was also another way to get students active because they moved desks to create space for eating, and students spent about 20 minutes cleaning the classroom and other parts of the school building. Webster and Suzuki mentioned that students had the opportunity to engage in physical activity during special activities like school assemblies, classroom activities, clubs, and school events. Lastly, students engaged in class walks, school walks, and school-wide physical activity. The research by Webster and Suzuki shows how schools contribute to helping school children engage in physical activity.

Boys use most South African schools sporting facilities, and it makes it difficult for girls to have access to these facilities (Kinsman et al., 2015). On the other hand, Webster and Suzuki (2014) mentioned that schools in Japan allow the community to use their sporting facilities before and after school hours for community-based sports teams competitions and training.

According to Centers for Disease Control and Prevention (CDC, 2019), there is the need for worksite wellness programs that have a physical activity component and can help maintain a healthier workforce. A healthier workforce has numerous benefits such as reduced direct costs in connection with health care expenses, increased employee

productivity, and increased employee morale (Baicker et al., 2010; CDC, 2012; Goetzel & Ozminkowski, 2008; Mills et al., 2007; Naydeck et al., 2008;). CDC (2019) mentioned that “worksites can encourage physical activity through multicomponent approach of offering management support, physical access to opportunities, policies, and social support programs” (n.p). Worksites can provide the following to promote physical activity:

1. Provision of on-site gyms or other physical activity facilities, such as walking paths (Carnethon et al., 2009; WHO, 2008),
2. Promotion of the use of stairs by making stairwells safe and attractive or using signs (Levi et al., 2007),
3. Provision of showers and changing facilities (National Governors Association, 2005) and,
4. Allowance of flexible work time or breaks for participation in physical activity (American Medical Association, 2004; Institute of Medicine, 2009; Levi et al., 2007).

While the above points are ways to add physical activity into the workplace, Aikins et al. (2014) found that some women living in urban areas in Africa have physical activity as part of their working lives in occupations such as street hawking, domestic servitude, or mechanics. While some jobs have built-in physical activity and we have seen ways to add physical activity to the workday, Bauman et al. (2012) found that working hours, job strain and overtime had inverse associations with LTPA.

Community Factors

Community factors are the formal or informal relationships that exist among individuals, organizations, and institutions (Rural Health Information Hub, 2020). The relationships that exist among these entities enhance or limit healthy behaviours. For example, when a community has easy access to recreational centers, parks, and safe places to walk or schools or churches facilities to engage in physical activity.

While walking is a simple form of physical activity there are several barriers to walking such as safety problems, rubber tiles on playgrounds, broken sidewalks, parked motorcycles next to street, unsafe roads, stray dogs, and lack of facilities such as benches for resting (Chen et al., 2015; Chippendale & Boltz, 2015; Eronen et al., 2014). Indigenous Australian adults recognized environmental factors such as feeling unsafe and dependence on cars as their barriers to physical activity engagement (Thompson et al., 2000). Children have negative attitudes towards participating in physical activity when they consider the number of roads to cross, the traffic density, and the location of roundabouts to get to a facility (Davison & Lawson, 2006). Temperature, season, and weather are also barriers to physical activity (Bird et al., 2009; Price et al., 2012). In studies that examine the impact of urban location on physical activity participation, physical activity was lower among adults in rural areas than in urban study participants.

The built environment² is an important factor of physical activity for adults (Black & Macinko, 2008; Booth et al., 2000). There are several ways in which the various components of the built environment affect different types of physical activity. For example, children in

² Built environment refers to the human-made environment that provides the setting for human activity.

neighbourhoods with a safe built environment can decide to walk or bicycle to places by considering the distance between home to school or the soccer field, instead of being driven to those places (Kerr et al., 2006; McDonald, 2007; Tal & Handy, 2008).

Safety at parks is also a major concern (Bedimo-Rung et al., 2005). People often visit parks that are well monitored regularly and express displeasure for places that are not kept well. Booth et al. (2000) mentioned that people will participate in regular physical activity if there are safer footpaths for walking and having access to a park. Carver et al. (2008) found that safety along the route, whether from traffic or strangers, is also important factor for physical activity. Pleasant landscapes, walking paths, interconnections between streets, attractive architecture, benches for resting, a place for dogs and smooths surfaces for hiking motivates adults to engage in physical activity (Chippendale & Boltz, 2015; Macniven et al., 2014; Yoo & Kim, 2017). There is also a significant positive relationship between perceived neighbourhood safety and physical activity (Centres for Disease Control and Prevention, 1999).

Public Policy

The public policy level of the ecological model examines municipal, district, regional, and national policies that help regulate or support health actions and practices for physical activity engagement (Rural Health Information Hub, 2020). For instance, there could be a policy that allows the general public to access the recreational spaces for schools.

The Institute of Medicine (2009) and the WHO (2007) stated the need to implement formal policies that will promote physical activity at the workplace, for example, policies for exercise breaks or bicycle parking. The Institute of Medicine (2015) reported that policies

could help build a community that encourages physical activity engagement. The policies and strategies can include streets built to allow pedestrian walking and bicycling, promoting physical activity, installing bus stops that would encourage walking, and build/maintain facilities in communities. Martin Ginis et al. (2016) highlighted the need for funding for programs, training, architecture and construction, transportation, and costs at the policy level. Rimmer et al. (2004) reported the lack of policies that are important to persons with disabilities in providing recreational opportunities and accessible facilities and the development of accessible review processes by facility managers.

I will conclude this literature review with a table that summarizes relevant researchers who covered the various levels of the ecological model in their studies (see table 2 below).

Table 2: A table of factors that influence women's physical activity participation within the levels of ecological model.

Intrapersonal Level		Researchers
Barriers	Physical or health problems (fatigue, ill health, respiratory problems, fear of falling, and/or lack of energy)	Brownson et al., 2000; Chippendale & Boltz, 2015; Gillette et al., 2015; King et al., 2000; Salehi et al., 2010; Shiraly et al., 2017; Simmonds et al., 2016; Welmer et al., 2012; Wilcox et al., 2000
	Lack of role models and insufficient guidance	Allender et al., 2006
	Time limitations	Eronen et al., 2014; Costello et al., 2011; Nadri et al., 2016; Thornton et al., 2016
	Lower educational levels and lower family income	Kinsman et al., 2015
Enablers	Sense of achievement and enjoyment	Baert et al., 2011; Horne et al., 2012; Miller & Brown, 2017; Sharifian, 2014
	Socioeconomic status, occupational status, and educational level	Bozionelos & Bennett, 1999; Brownson et al., 2000; King et al., 2000
	Psychological benefits	Bird et al., 2009; Nadri et al., 2016; Simmonds et al., 2016
	Health and fitness benefits	Bauman et al., 2012; De Groot & Fagerström, 2011; Macniven et al., 2014; Nejati et al., 2010; Tuakli-Wosornu et al., 2014
	Age, gender, ethnic origin, body image	Bauman et al., 2012; Booth et al., 2000; Brownson et al., 2000; Kinsman et al., 2015
Interpersonal Level		
Barriers	Lack of Companion	Khalili et al., 2015; Kowal & Fortier, 2007
	Family responsibilities	Macniven et al., 2014
	Cultural Norms (role of girls, maternal and household factors)	Kinsman et al., 2015; Micklesfield et al., 2014
Enablers	Social support	Courneya et al., 2000; Booth et al., 2000; Eyler et al., 1999; Wendel-Vos et al., 2007
	Positive social interactions	Downie et al., 2008; Van Holle et al., 2015; Yi et al., 2016; Yoo & Kim, 2017
	Sense of competence because of social interactions	Dunton et al., 2009
	Observation of others exercising	King et al., 2000; Thøgersen-Ntoumani, 2009

	Supervision by health professionals	Cohen-Mansfield et al., 2004; Patel et al., 2013;
Institutional Level		
<i>Barriers</i>	Girls do not have access to school sporting facilities	Kinsman et al., 2015
	Job strain, working hours, and overtime	Bauman et al., 2012
<i>Enablers</i>	Opportunities in schools to engage in physical activity	Webster & Suzuki, 2014
	Communities having access to school sporting facilities	Webster & Suzuki, 2014
	Worksite promotion of physical activity	Carnethon et al., 2009; Levi et al., 2007; National Governors Association, 2005; Institute of Medicine, 2009; WHO, 2008
Community Level		
<i>Barriers</i>	Issues related to unsafe walking environment	Eronen et al., 2014; Chen et al., 2015; Chippendale & Boltz, 2015
	Unsafe environmental factors	Davison and Lawson, 2006; Thompson et al., 2000
	Temperature, season, and weather	Bird et al., 2009; Price et al., 2012
	Lower physical activity related with rural habitats	Brownson et al., 2000; King et al., 2000
<i>Enablers</i>	Safe built environment	Black and Macinko, 2008; Bedimo-Rung et al., 2005; Carver et al., 2008; Chippendale & Boltz, 2015, Kerr et al. 2006; McDonald, 2007; Tal and Handy, 2008; Yoo & Kim, 2017
	Easy access to recreational infrastructure	Booth et al., 2000.
Policy Level		
	Presence or absence of funding and formal policies that support participation	Martin Ginis et al., 2016; Rimmer et al., 2004; Institute of Medicine, 2009; WHO, 2007; Institute of Medicine, 2015;

The overarching theme of this section of the literature review was that the five levels of the ecological model influence the involvement of girls/women in physical activity. Relevant scholarly sources had been reviewed, paving the way for further

research that targets Ghana and other African jurisdictions, especially in sub-Saharan Africa. The various studies reviewed have explored many of the factors affecting women's involvement in physical activity. The concept of physical activity in rural Africa is not yet formalized. People do not yet see the need for a lifestyle change to add more physical activity to replace the diminishing manual work and activities common in rural areas.

In conclusion, most of the prior research had been done in African urban areas thus, neglecting the rural areas. There was and is a need to examine rural settings as well. In addition, most research targets men, boys and girls with little interest in women between the ages of 40-60 years. Twenty-first century technology and urbanization are progressing quickly into rural settings and as such, it is likely that rural women's physical activity profiles will soon mirror their urban counterparts. To help the WHO reduce the high prevalence of physical inactivity in Africa and beyond, there is a need to identify which factors influence rural women's involvement in physical activity. This will ensure that the proper education, public health, and physical activity programs and policies can be implemented to assist rural women find new ways to engage in physical activity.

Chapter Three - Methodology

Research Design

The primary purpose of this study was to explore the factors affecting rural women's involvement in physical activity in Ghana. An exploratory qualitative design influenced by grounded theory methodology was adopted for this study. The purpose of exploratory research is to understand what is going on at a place and investigate social phenomena without straightforward expectations (Schutt, 2018).

Qualitative research was chosen for this study because it can be used to dive deeper into a situation and to understand the human experience (Jackson et al., 2007). The sample size is usually small, and some conventional methods are one-on-one interviews, focus group discussions, and participant observation. The need for exploratory research is to help better understand a situation that has not been studied more in-depth (Shields & Rangarjan, 2013). Again, since exploratory study can address research questions of all types, it is seen to be flexible. Finally, exploratory research can provide meaningful insight into a given problem.

Sample and Sampling Procedures

The data for this study was collected through individual semi-structured interviews. The sample for this study consisted of nine women between the ages of 40 to 60 years who live in a rural area in Ghana. A purposive sampling technique was used to select participants. Purposive sampling is a technique used when the researchers choose congruously eligible participants for their study because they were suitable for the intended research (Marshall, 1996). Given current COVID-19 travel restrictions, an in-country research assistant was

recruited to post an announcement at the local community's information centre to invite participation in the study. The announcement included my telephone number, so those interested contacted me, and we scheduled a time for the interview. See Appendix A for the recruitment announcement. The consent document was read out to participants, and questions from participants about the study were answered. The number of participants was not set ahead of time, instead, participant recruitment and data collection continued until data saturation was achieved (Guest et al., 2006). After the eighth interview, I surmised that no new data was emerging, so I completed one additional interview, the ninth interview, to confirm this thought.

Participants Details

The remote (via telephone) interviews began on the 23rd of October 2020 and ended on the 20th of December 2020. I interviewed nine women from three different communities in the Central region of Ghana. The communities are located in the Gomoa West, Ajumako Enyan Essiam, and Ekumfi districts. The participants spoke Fanti and identified Akan as their ethnic group. Three of the women were Muslims, and six were Christians of the Methodist denomination. The age range of the women was 40 to 60 years, with an average age of 45 years.

The main job of the participants was farming and selling. They grew crops like cassava, yam, plantain, maize, cocoa, and vegetables. They solely relied on their strength to weed and sometimes paid others to weed for them or use chemicals to prevent them from growing. They reported a walking distance of four kilometres to six kilometres to the farm.

Those who engaged in trade sold inexpensive pieces of jewellery, foodstuff and kenkey³. Participants mentioned that they mostly spent two to six days on their farm weekly. Most of their farming was not on a larger scale and was basically what they could afford to manage mostly based on their resources regarding money and energy. They usually fed on the produce and sold some. The most significant amount they could get on their farm in a year ranged from 100 cedis (\$21 CAD) – 600 cedis (\$129 CAD). According to Smith (2018) the estimate of living income in rural cocoa growing areas in Ghana is GHS 1,464 (\$317 CAD) per month for a family of two adults and three children.

Participants reported a range of schooling levels. Among the nine participants, only one had a university degree. The rest ended their education after junior or senior high school. Two participants stopped school after grade three and five due to illness and lack of money, respectively.

Four of my participants indicated that they were married, and four mentioned that they were divorced, and one widowed and didn't remarry. Three women had six children each, two women had five children each, two had three children each, one had two children, and one had a single child. The ages of the children of my participants range from two years to 38 years.

Three of my participants indicated they have stayed in their community for their entire life and have not stayed a year or two in any other community. On the other hand, six participants have stayed in other communities for over a year or two. They described those

³ Kenkey is a meal made out of dry maize.

communities as bigger places than their current villages. A summary of participants' demographics is shown below in table three.

Table 3: A table of the demographics of my participants.

Pseudonym names	Esi	Abena	Efuah	Egyirwaa	Fynnba	Asantewaa	Rahmat	Khadija	Hawa
Age	46 years	40 years	46 years	41years	60 years	45 years	40 years	40 years	53 years
Marital status	Divorced	Married	Married	Divorced	Divorced	Divorced	Married	Married	widowed
Number of Children	Two	One	six	Five	Six	Five	Six	Three	Three
Level of Education	Degree holder	Vocational training	Junior High School	Junior High School	Grade Five	Grade Three	Senior High School	Junior High School	Form Four (old educational system)
Religion	Christian	Christian	Christian	Christian	Christian	Christian	Muslim	Muslim	Muslim
Type of Job	Teaching	Decorating	Farming Trading	Farming	Farming	Farming trading	Trading	Farming	Farming Trading
Number of years in this occupation	22	10	25	14	38	30	15	20	15
Number of days spent on work per week	Five days	At least three days	Six days	Five days	Four days	Six days	Not discussed	Three days	Not discussed
Number of years spent in current location	12	10	Entire life	40	Entire years	41	20	Entire life	39
Migration status	34 years in another rural area	30 years in Accra	Never migrated	A year in a different community	Never migrated	Four years in a different community	20 years before moving to current location	Never migrated	14 years in two communities
Annual income	3800 cedis (822CAD)	Didn't respond	7800cedi (1688CAD)	600 Cedi (129CAD)	Didn't respond	Didn't respond	2400 Cedi (518CAD)	6000 Cedi (1297CAD)	Didn't respond

Data Collection and Analysis Procedures

Ethical procedures were followed in collecting data since the study involved human beings. Ethical approval was sought from Interdisciplinary Committee on Ethics in Human Research (ICEHR 20210672-HK). The research was approved on the 7th of October 2020. See appendix B for the ethics approval letter. To show respect to the Chiefs and Assembly Members of the communities to be used, a letter was sent to the leaders to ask for permission before data collection began. See Appendix C and D for the permission letter and approval message, respectively. Oral consent was obtained from participants before the interview was conducted. See Appendix E for the consent form.

Semi-structured interviews, conducted by phone, were used to collect data. Due to low internet connectivity in the rural communities, media such as Skype and WhatsApp video or audio calls were not chosen. Instead, for clarity in audio recording and the participants' convenience, phone calls were chosen. Even with this medium, there were some challenges to data collection. During every interview, the call was dropped at least once (sometimes multiple times), and the call had to be re-established. All interviews were audio-recorded on two electronic devices and I also took notes during the calls. The interviews were anticipated to be approximately 60 to 90 minutes in duration, but most interviews lasted for 40 to 45 minutes because of the difficulty in maintaining a phone connection to Ghana.

I began data collections on the 23rd of October 2020 and ended on 28th of December 2020. The interviews were conducted in Fanti, a local dialect. The interviews were then translated to English during the transcription process with diligence to ensure the participant's original meaning was maintained (Patton, 2015). See Appendix F for interview

questions. Following each interview, the researcher completed a field journal entry by reflecting on issues, thoughts, and themes that arose during the interview.

In addition to following Patton's (2015) guidelines on transcription, the constant comparative method was used to analyse the data. Charmaz (2006) mentioned that the constant comparative method is "a method of analysis that generates successively more abstract concepts and theories through inductive processes" (p.187). According to Chun Tie et al. (2019), "the constant comparative method is deemed an original way of organising and analysing qualitative data" (p.3). Also, the constant comparative method is used in grounded theory for coding and category development (Birks & Mills, 2015). Constant comparison is done with data to codes, codes to categories, and categories to concepts. When coding the data, I followed the first two stages of the four-stage approach favoured by Glaser and Strauss (1967). I drew on the grounded theory for my analysis by following the first two stages, but since I was not developing theories, the last two stages were not followed.

I used a software package called NVivo for the coding. All transcriptions were uploaded to the app. The use of NVivo allowed for efficient coding of the data and the ability to explore the data deeply, looking for themes and connections between participants' experiences. I analyzed the transcripts of each participant as soon as I completed the translation. I compared data from the same person, between different participants, with and between situations. I went on to generate codes. Initial coding was done based on the interview questions. For example, there were codes such as job responsibilities, individual physical activity and family involvement. After initial coding I grouped all details regarding demographics. Details on age, ethnicity, educational level, occupation, marital status, and annual income were sub-coded as demographics. I paid critical attention to my research

question and looked for data regarding barriers and enablers that shaped the participation of Ghanaian rural women in physical activity. After coding for eight enablers and five barriers to physical activity, I developed themes that were reflected in the data.

Credibility and Trustworthiness

According to Cope (2014) “the perspectives of quantitative research are rigor and validity, and the perspectives of qualitative research are credibility and trustworthiness.” (p.n.89). Credibility refers to the truth of the data or the views of the participants and how the researcher interprets or represents them (Polit & Beck, 2012). Cope (2014) stated that “credibility is enhanced by the researcher describing his or her experiences as a researcher and verifying the research findings with the participants” (p. 89). I used member checking to establish credibility in my research. I did one member check. I did this with Esi because she is the only participant who could read English. My supervisor also read all transcripts and affirmed that I had done an accurate job of coding the data.

Trustworthiness refers to the confidence in the data, how it is interpreted, and the methods used to establish the quality of the study (Polit & Beck, 2009). Amankwaa (2016) urged researchers to establish the protocols and procedures needed for research to be accepted worthy by readers.

Cope (2014) suggested the use of triangulation to enhance credibility and trustworthiness. According to Patton (1999) triangulation in qualitative research is the multiple use of data sources to comprehensively develop an understanding of a phenomena. In my study, apart from the data collected and my field journaling, I used a trusted friend. I spoke to one of my undergraduate degree colleagues who is currently working in the Ekumfi

district regarding the findings of my research. We discussed the emerging themes, and she shared her thoughts.

Chapter Four - Findings

This chapter of the thesis presents the findings of the study. It explored, in great detail, the enablers and barriers that shape the participation of rural Ghanaian women in physical activity. After analyzing the data, five barriers and eight enablers emerged that shaped rural Ghanaian women's participation in physical activity. I first discuss the enablers and then focus on the barriers. Throughout this chapter, I make connections to the ecological model and other research related to enablers and barriers to physical activity participation for women in rural areas and urban areas in Ghana, Africa and the world.

Enablers and Barriers that Shape the Participation of Rural Ghanaian Women in Physical Activity

Enablers

Communal Labour. Asamoah (2018) explained communal labour as community members coming together to complete a task to fulfil their communal interest. He noted that communal labour has contributed significantly to Ghana's development and traced the practice through the pre-colonial, colonial and post-colonial eras. Communal labour is practiced in all regions of Ghana (Asamoah, 2018).

In a typical communal labour day, the traditional announcer known as the “gong gong beater” summons the entire community to communal labour. Yankah (2016) mentioned that, upon hearing the sound from either the “dawuro⁴” or the “asafo⁵”,

⁴ Dawuro is a double metal bell. It has two different pitches in an interval of an octave usually, but sometimes also a ninth. The instrument is played with a hard wooden stick or a metal rod.

⁵ The asafo drum is an open single-headed conical drum made of one single piece wood. The drum is beaten alternatively with a wooden stick or the palm of the hand.

everybody was obliged to go to the chief's house. In recent times, communities use the community-wide broadcaster to announce dates and venues for communal labour. People who do not avail themselves for communal labour are asked to pay a fine. One of my participants, Fynnba described it this way, "If you don't go to communal labour, you will be fined. Because of that, we all go." Growing up, I always went with my mom whenever she had to go for communal labour. The sense of joy people had while contributing to their communities' development is something I will never forget.

All of the participants discussed the existing communal labour practices in their communities. They described the tasks as follows: sweeping streets, weeding the roadside, clearing weeds around libraries, carrying sand and stones, cleaning gutters, clearing bushes on refuse dumping areas, and cleaning the path to their sources of water. When asked about women's role in communal labour, Asantewaa concluded that "women do the most part" of the load.

Communal labour was organized almost every week. Participants named Tuesday as the most appropriate day for communal labour because of a cultural taboo preventing them from going to their farms on Tuesday. Other days that were mentioned were Wednesday and Friday. People who are usually exempted from communal labour are those working in government sectors like schools and hospitals. Esi stated that "Because of my work, I am not able to attend, but when I don't go to work, I join them." From the participants' descriptions, communal labour was a significant source of physical activity for women in these communities. Activities like weeding and carrying stones and sand require a lot of energy. These activities also involve whole-body physical activity. In this sense, if these women can participate in these manual jobs for an hour each week apart

from their daily routines, it can be viewed as an excellent source of physical activity for them.

Communal labour can be located in the community level of the ecological model. After extensive research, I was unable to locate research citing communal labour as a means of physical activity. However, in the interviews, the participants made it clear that communal labour in rural Ghanaian women's lives is an important, yet unrecognized, source of physical activity in their lives.

Festival Time. The people of these three study communities celebrate a festival called Akwambo. According to the Ghana Tourism Authority (n.d.), the Akwambo festival is celebrated in August by the people of Gomoa, Ekumfi, Ajumako, and Agona districts in the Central Region of Ghana. Akwambo literally means “cleaning paths” (Ghana Tourism Authority, n.d.). The Akwambo festival is a week-long celebration to remember the journey and founders of the four districts. When the founding fathers settled in these areas, they cleared paths to rivers, farms and other important places; this is why a day is set aside to remember performing these critical activities. Today, other activities besides path clearing have been added to make the celebration weeklong such as durbar, music, dance performances, jogging, soccer games, family and friends' reunions and other special events. On the day of the festival, the entire community gathers at the ancestral shrine. The chief pours a libation to thank the ancestral spirits for their protection for the previous year and request abundant rainfall, good harvest, and more blessings.

Participants mentioned the festival time as the only occasion whereby their community organizes opportunities for them to engage in physical activity. Some

physical activities participants specifically mentioned were walking, jogging, dancing to brass band and drums, completions in “oware⁶”, “ludo⁷”, draft, “ampe⁸”, sack race, soccer games, musical chair dance, cross country running, and cooking competitions.

Being a member of one of the communities that celebrate the Akwambo festival, I have experienced it firsthand. Akwambo is one of my favourite festive seasons, and I believe this is true for many others in these communities as well. This is the time when friends and family you haven't seen for ages may decide to come home during a particular festival year. During this time, everybody participates in activities with passion. Festivals are the only time you will see adult women engaging in organized sports and games. The community leaders organize these activities as competitions between various kinds of groups such as travelers versus non-travelers, supporters of the two prominent soccer teams (Accra Hearts of Oak versus Asante Kotoko) or followers of the two main political parties (New Patriotic Party versus National Democratic Congress).

Women's involvement during Akwambo cannot go unnoticed. Apart from the path clearing and drumming where tradition forbids women from taking part, women contribute to a successful festival. When interviewing my participants, I specifically asked if women between the ages of 40 and 60 years participate in the festival activities. They all responded that they do take an active part. Khadija said, “Women are part of the

⁶ Oware is an abstract strategy game among the Mancala family of board games (pit and pebble games) played worldwide with slight variations as to the layout of the game, number of players and strategy of play. Its origin is uncertain, but it is widely believed to be of Ashanti origin.

⁷ Ludo is a strategy board game for two to four players, in which the players race their four tokens from start to finish according to the rolls of a single die.

⁸ Ampe is a simple but energy-driven game played by school-age children. It originated from Ghana and also played in other neighbouring countries. It is played by two or more people and requires no equipment. The leader and another player jump up at the same time, clap and thrust one foot forward when they land.

festival, we even play soccer and other games.” Asantewaa also said “We dance, walk throughout the town to other towns we also play soccer.”

The festival avenue created by these communities for people to engage in physical activity is commendable. Bradley et al. (2019) in their study, recorded the levels during the Glastonbury festival and found large movement distances which are six times greater than the recommended guidelines for health benefits guidelines. They suggested that to achieve physical activity guidelines, at large-scale festivals attendance should be encouraged.

Festivals as enablers of physical activity are also located at the community level of the ecological model. Festivals are one of the avenues that help women to engage in organized physical activity and sports such as soccer. On the downside, festivals are organized just once a year for a week though they still allow women to enjoy the fun and health benefits of organized games.

Household Chores. Research done by Cerrato and Cifre (2018) in Spain found unequal involvement in household chores by women and men with women were bearing responsibilities for more of the work. Household chores are a powerful means of women engaging in physical activity. In the Ghanaian context, women are expected to complete the majority of chores and thus, they form a significant portion of a women’s engagement in physical activity. Akanle and Oluwakemi (2012), in their research on traditionalism and household chores in Nigeria, concluded that gender role allocation seems to be stable regardless of many changes in the world. They found that women with lower educational backgrounds performed the majority of the household chores. One of their participants

described that it is taboo for her husband to do household chores with her while another participant said chores are strictly meant for women.

The vast majority of my participants reported a lower educational background, so performing household chores is one of their primary duties before they can even think about their jobs. A study done in UK by Smith and Middleton (2007) indicated a relationship between poverty and lower educational background. People with less economic means like my participants are unable to hire assistants for household chores. The most common chores my participants mentioned included: sweeping the house, going to the refuse dump area, washing bowls, cleaning the mortar, fetching water, cooking for the family, and washing clothes. Fynnba said “When I get up around 4:30 am, I sweep, I fetch my water, I do that three times, and I take my garbage to the garbage dump.” Efuah stated, “I sweep, I wash my bowls, and anything that I have to do in the house I do it.”

These household chores contribute tremendously to the participants’ physical activeness. In their communities, the water sources are situated over 4 kilometres away from their houses. Usually, they walk over this distance more than two times a day to fetch water. Most homes in these communities have a large compound, which the women sweep with a broom (made out of palm nut tree leaves). Our way of sweeping requires swinging both hands or one hand rigorously and is usually a tedious activity. Refuse dumping areas are located at the outskirts of the communities, and they go there once every day.

As a cultural norm in South Africa, Kinsman et al. (2015) found that girls are less likely than boys to gain exposure to organized physical activity programs in rural areas due to cultural factors such as girls’ roles being perceived to be in the kitchen. The data

collected for this research shows clearly that women in these rural areas lack exposure to organized games. However, their involvements in their daily household chores help them, in the long run, to stay active. The definition of World Health Organization [WHO] in their 2014 Report says that physical activity

Is any bodily movement produced by skeletal muscles that require energy expenditure including activities undertaken while working, playing, carrying out household chores, travelling, and engaging in recreational pursuits (n.p.).

By this definition, household chores are considered physical activity. So, while rural women miss out on organized physical activity, their lives contain a great deal of physical activity from their strenuous household activities like fetching water, sweeping, pounding “fufu”⁹, and disposing of refuse.

In classifying this enabler, it will be placed under the interpersonal level of the ecological model. Authors like Kinsman et al. (2015) and Micklesfield et al. (2014) suggested that rural adolescents or girls are more likely to lead a sedentary lifestyle or miss out on organized games due to cultural norms and maternal household factors. While these two authors place household chores as barriers to physical activity, the data collected for this research suggests that household chores most often replace organized physical activity, hence, they could be considered an enabler of physical activity.

Type of Occupation. Edusah and Antoa (2014), in their study on the socio-economic contribution of small-scale rural industries in Ghana, suggested that “about

⁹ Fufu is originally a Twi (language of the Akan ethnicity in Ghana) word meaning mash or mix. It is a swallow soft doughy/mushy pounded cassava with plantains or coco yams in a mortar with a pestle and, eaten with only liquid soups as, light soup, palm nut soup, groundnut soup, and others.

two-thirds of Ghana's population lives in the rural areas where agriculture is the main occupation” (p.161). Assan et al. (2018) also wrote that “Agriculture remains an important part of countries' economies in West Africa, contributing to national gross domestic product, foreign exchange earnings and food security” (p.1). The Food and Agricultural Organization (2015) confirmed that agriculture continues to be the backbone of Ghana's economy.

The above preamble explains why, of the nine participants interviewed, six mentioned farming as their occupation. Most of them rely on farming to feed their family, and they sell just a small portion of it to support their family or their farming for the next year. These women plant their crops on at least two acres, with the highest acreage being four. Some of the plants they cultivate include cassava, yam, plantain, maize, and vegetables. Two of the women mentioned they have cocoa and palm nut plantations. Their responsibilities at their farms include clearing the piece of land, cultivating, weeding, and harvesting. However, on some occasions, they rely on others to help clear their land or use chemicals to suppress the weeds. They all devote at least three days to their farming, and the most reported was six days. When asked how participants travel to their farms, all replied they walk to their farms. These women walk over six kilometres each time they go to work. Participants were also asked if they use other forms of transportation like a car, motor bike, or bicycles to travel? Hawa responded, “I can take a car but taking a car will not help my health, so I do my best to walk.” Khadija also said, “I walk to the farm. There are no access roads for a car, so I walk.” Finally, Asantewaa confirmed, “I don't use a car, I walk.”

Among the nine participants, one was a trader. She prepared kenkey and sold it. The preparation of kenkey is strenuous, from putting the maize in water to carrying it to be ground to preparing the kenkey after some days of being ground. This participant mentioned that she does these activities on her own. She also carried the kenkey on her head while she roamed during selling. She walked over six kilometres each day in selling her kenkey.

The last two participants have occupations that do not require large amounts of physical activity, but they did report some occupation-based physical activity. The headmistress, for instance, goes on routine supervision daily, which requires walking. She occasionally supervises school events like “6th of March¹⁰” preparation, sporting events, and the like. Abena, on the other hand, performs some manual labour while working as a decorator. Decorators work on wedding venues, birthday celebration places, and other special occasions. She mentioned that when she has to go places, she uses both cars and walking.

In examining the various jobs performed by the participants, their responsibilities at work, and how they commute to work, made it clear that their occupations provided them with significant physical activity. It was evident that they missed out on organized physical activity, but their traditional work required many bodily movements, thereby likely fulfilling their daily physical activity quota. Research by Aikins et al. (2014) found that some women living in urban areas in Africa have physical activity as part of their working lives in street hawking, domestic servitude, or mechanics. Similarly, this can be

¹⁰ 6th March is an independence parade held every year to mark the Independence Day of Ghana on 6th March 1957.

said for women living in rural areas since they often make a living as traders and farmers. In classifying this enabler, it will be placed under the institutional level of the ecological model.

Availability of Playing Field. A built-in environment is an essential factor for adults to engage in physical activity (Black & Macinko, 2008). Booth et al. (2000) found that safer footpaths for walking and having access to a park encourages regular physical activity. Every community in Ghana that has a government school has a playing field. Theoretically, anybody can use these fields at any given time. Some of my participants mentioned their communities even have two fields; one that belonged to the community and the other to the school. According to Abena, her village had both volleyball and basketball courts, and they can freely be used. She said, “Oh yes, they have a volleyball court and a basketball with nets and polls. They all have their designated areas, and you can freely use the place.”

Even though most at times, the playing fields are utilized by men and school-going children, they also helped communities organize festival events that involved women. In circumstances where men use the field to play soccer on some weekends, women could walk to the field to watch them play and cheer for them. Abena mentioned she always walked to the field with her son to watch him ride his bicycle.

In summary, the presence of a playing field was an enabler for physical activity and helped increase physical activity. However, women in these rural areas underused the playing fields. They were always busy with their chores, or they did not see playing sports as an activity for women. The availability of the playing field is placed under the community level of the ecological model.

The Role Physical Education and Sports Played in their Youthful Years. The interviews conducted sought to ascertain the involvement of the participants in physical activity and sports in their school going days and what those experiences did for them whilst they grew up. All nine participants stated physical education was a part of their school curriculum. They also described their involvement in sports during their time in school. Seven participants mentioned they had been involved in school sports. During their school days they participated in soccer, running events, jumping, throwing balls, and traditional games like “ampe”, sack race, lime, and spoon. These participants' interest in physical education and sports was carried throughout their youthful days. Webster and Suzuki (2014) stated schools create the opportunity for students to engage in physical activity. In the case of my participants, physical education helped them keep active. Abena went on to play in a basketball team after her junior high school education. Esi also mentioned that she joined her training college cadets because she was a runner in senior high school. She also used that experience to support her students when it was time for sports.

Asare (1982) in his study on the impact of British colonization on the development of education and physical education in Ghana classified the years from 1957 to 1975 as the new era of Ghanaian physical education. He described it this way:

During this time, many changes occurred which were associated with nationalism, and sports was used as a weapon to weld the various tribes of Ghana together – it brought about a sense of unity and brotherhood which the African States were relentlessly pursuing (p.179).

In Ghana's struggle for national reconstruction, socially and politically, physical education, and sports helped unify the people (Asare, 1982). Asare's research explains the importance physical education and sports brought to us, aside from the fact that physical education helps educate students on how to be physically active. In classifying this enabler, it will be placed under the institutional level of the ecological model

Parent as Role Models. The participants saw their parents as those who introduced them to specific activities that have contributed to their physical activity spectrum to date. Most of the participants mentioned that the kind of job they do now came as a result of them taking over what their parents used to do. Rahmat said, "She [her mother] was one who started the kenkey selling, and I took over when she couldn't do it again." Fynnba responded that she saw that her parents doing some activities to stay active, and she also does them to stay active. When she was asked if her parents knew the benefits of being physically active, she responded, "Yeah! They did that to stay active, and it gave them strength. That is why I looked up to them and followed their footsteps." The participants also reported what their mothers' thoughts about physical activity and which activities they did to stay healthy such as walking and performing their household chores. They also mentioned how their parents admonished them to do certain things to help their health. Abena said, "My mom will tell you not even to sit when washing things – she will say you are lazy. So, she will say it is a form of exercise that works on your body."

Some researchers have shown the relationship between parents' physical activity levels and that of their children's physical activity level. Moore et al. (1991) studied the influence of parents' activity levels on the activity levels of young children. According to

them, “children of active mothers were twice as likely to be active as children of inactive mothers” (p. 215). They also reported that children with both parents being active were 5.8 times more likely to be active compared to children of two inactive parents. Finally, they related the possible mechanisms for the relationship between parents’ and child’s activity levels to parents’ seen as role models.

In conclusion, parents can influence the involvement of their children’s participation in physical activity as documented by Moore et al. (1991). During the interviews, it was clear that the participants showed they observed their parents’ relationship to physical activity and saw them as role models while walking in their literal and figurative footsteps. Categorizing parents as role models and thus as enabler for physical activity can be placed within the interpersonal level of the ecological model. This is because the participants’ parents are seen as a social network or support systems, like the workgroup, family, culture, and peers.

The Role of Saturday. Saturday is regarded as the weekend for most Ghanaians. It is the day where most governmental institutions are closed, including schools. In rural areas, most people did extra work on Saturday. This was the day they completed many household chores; they ensured that their houses were clean, clothes were washed, bathrooms were cleaned, meals for the week were prepared, and they still had time to go to the farm.

On Saturday, school-going children are all home to help their parents take care of the house and get food for the week. When participants were asked what Saturday looked like in their community, they reported the various things they did in their early morning until they were ready to go to the farm. This was a routine they keep for every Saturday except when there was a funeral or a festive occasion. Hawa said,

Saturday is a day that students don't go to school, and most workers don't go to work. So, most of us go to the farm. When we all get up, we just go to the farm. If someone doesn't go to the farm and she is a seller, she will arrange things and give them to the children to go and sell. So, for Saturday, as parents are helping, the children also help.

Esi also described Saturday this way,

Saturday, I will say everybody has a particular chore they do. For instance, we will wash our clothes, bowls and washrooms, and sweep. Saturday is when we do majority of our household chores and is the day we are mostly home and can do a lot of cleaning in the house. Some also go to the market to buy things. I usually go to Accra to buy things for the month. Others also go to the farm.

Saturday is a special day for rural dwellers, and it contributed immensely to women's participation in physical activity. This was the one day that everybody reported being on the go and performing both household and farm chores. To this effect, Saturday can be seen as a day that facilitated physical activity involvement for rural women and can be placed under the community level of the ecological model.

Barriers

Lack of Friends to Engage in Physical Activity. Participants were asked to describe the physical activities they do with friends. Five participants reported they did not have friends to engage in physical activity with, and four stated that they only participate with friends if they had free time. One particular response from Hawa stood out:

At first, it was profitable to have friends, but now it is not good. At this time in my life, I don't have friends in this town. If you look for me and you don't find me, I will be sleeping. After church, I just go to bed or stay at my compound. If my kids come around, I converse with them.

Similarly, Rahmat replied that her friends had all moved away from her village, "I don't have friends. My friends have all travelled, so I don't have a friend to play with." Booth et al. (2000) suggested that having friends who frequently participated in physical activity influenced individuals to engage in regular physical activity. In the current research, participants were not able to benefit in this way because most did not have friends that were physically active.

Page et al. (2007) found that overall physical activity participation was recorded to be lowest among adolescents who mentioned that making friends was difficult and who were less involved with friends. Engaging in physical activity with friends can provide extra avenues for physical activity. It can also increase the possibility of enjoying physical activity because of the shared experience. Not having friends to engage in physical activity with, my participants found it hard to increase their involvement in physical activity. Page and colleagues concluded their study by saying that, "Friendship factors should be given serious consideration in health education strategies and research efforts designed to in youth physical activity" (n.p.). I think any strategy developed to increase rural women's participation in physical activity, friendship factors must be considered. In classifying this barrier, it will be placed under the interpersonal level of the ecological model.

Poverty/Lack of Time to Engage in Physical Activity. I asked a question to ascertain the income level of my participants. Among the nine participants, five were able to

share what they earned yearly or monthly. The other four stated they could not calculate what they earn because usually they end up spending what they earn or were not able to sell their farm produce. Fynnba answered about her income, “Mmm! Since we are in a village, we don’t sell, but the little we will get to eat.” Asantewaa who farms and sells also answered,

With regards to the farm, you can only get something out of it after a year. With that of the selling, when you get the money, we always use it to replace items that are left with few. So, you wouldn’t keep the money to even know how much you have earned each month.

The incomes of the participants who were able to share were not promising figures with the exception of the headmistress who earned above 38000 cedi (\$8,228 CAD) in a year, the rest earned below 8000 cedi (\$1,729 CAD) in a year.

The income of these participants played a major role in their lack of interest in organised physical activity. When participants were asked what they considered as the major reason women of their community did not consider engaging in organised physical activity, four of them stated that due to lower incomes, they preferred to work on their farms to sell goods rather than to exercise or play sports. Abena described the women in her community as being in the role of both parents, and thus, they have to work often to be able to take care of their children:

So due to life difficulties, some will go and sell instead of going to exercise. These women have to sell to take care of their children, so if you tell them to exercise, they don’t know how that can help their lives.... these women cannot exercise because they are seen to be both the father and mother in their children’s lives. They cater to

the family, so to leave their work and go for a jog, or a walk will be a problem. Most of the time, before they come back home, they are already tired of doing anything else. You know how life is here. For some people, they even leave home before 6:00 am to the farm. Most people don't have help in their lives to have the luxury of exercising. So just ask yourself, how many people will say they will exercise before they leave the house?

Four of my participants were from Ekumfi, which is classified as the poorest district in the Central Region of Ghana by the Ghana Statistical Service (2015). Ekumfi is among 11 other districts with an incidence of poverty above the regional averages of 19.3% and 5.7% respectively. According to the UK Economic and Social Research Council, physical activity has direct costs in terms of money and time which are higher for those living in poverty. Kinsman et al. (2015) reported that poverty is associated with girls' level of physical activity. They also mentioned that poverty could be seen as either an enabler or a barrier. Due to their poverty level, my participants were compelled to do all kinds of manual work, which contributed to their daily physical activity. However, due to the same poverty level, they could not willingly engage in physical activity for fun or leisure.

Poverty can be linked to the lack of time to engage in leisure. When women have to spend the majority of their time making sure the family has something to eat, they are left with little or no time or strength to engage in fun or leisure activities. Hawa expressed the lack of time to engage in physical activity in this way:

Yes, as said, we don't have time. You can tell your friend that we should take a walk sometimes, she will say I don't have time. Even if we have time, the children will come and call their mothers when we start the activities. So, they won't have time to

leave their children or work to do these things. Sometimes we sit and play ludu, but as we are playing, you will have visitors, or someone will be buying your stuff, so you have to leave.

Participants were asked if they thought women would attend an organized physical activity session if someone came to their village to facilitate one. Hawa responded, “For this place mmm let me use myself as an example, if someone comes to ask me to join her exercise, I will say I don’t have time for that. So, I guess that is how most women will respond.”

In conclusion, poverty and lack of time can influence women’s inability to engage in leisure activities or organised physical activities. The more time they spent providing for their children, the more they were unable to have an interest in physical activity. It might be helpful to note that motherhood, across most cultures, make a women’s ability to participate in physical activity much more challenging but that poverty makes this much more problematic. That is, this affects lower-income mothers more than middle- or upper-income women. Albright et al. (2005) stated that racialized women or those with low socioeconomic statuses are at increased risk of cardiovascular disease, type 2 diabetes, and all-cause mortality, than higher socioeconomic status Whites. A national survey in United States indicated that low-income, ethnic minority women have the highest rates of inactivity. Dlugonski et al. (2017) confirmed that Black women with low-income levels have low rates of physical activity. This barrier will be placed under the intrapersonal level of the ecological model.

Inability of Religious Groups to Organise Physical Activity. When asked their religion, my participants identified as Christians (6) and Muslims (3). All of the Christians mentioned they attend the Methodist Church of Ghana and the three Muslims are all

Ahmadis. In Ghana, Christians are approximately 71% of the population, while Muslims are 18%. The rest of the population practice indigenous beliefs, belong to religious groups or have no religious beliefs (International Religious Freedom Report, 2018).

When participants were asked if their religious groups organized physical activity for them, the responses were diverse. Answers ranged from religious groups don't organize physical activity at all to they do on occasions like Christmas and Easter. The Muslim participants mentioned that when they attended district conferences some physical activity was organized for them, but in their regular religious communities, there was no physical activity organized. Two of the Christian participants from the Gomoa District mentioned their Methodist church did not have a regular schedule for physical activities but rather solely relied on occasions like Christmas and Easter to organize some events. The four remaining Christian participants (three from Ajumako Enyan Essiam District and one from Ekumfi District) mentioned the absence of any physical activity events organized by their religious groups. While living in the Ajumako Enyan Essiam District for over 20 years, I observed that the religious groups failed to organize physical activity for their members. To triangulate what the participants said, I spoke to one of my undergraduate degree colleagues who was working in the Ekumfi district. She said, "You know I have been in this community for two years and I have never seen any religious group, be it Christian or Islamic group organizing their members for sporting events."

From this, I could conclude that religious groups are failing to help their members be active. With the power they hold on their members, they could be one of the greatest enablers to engage people in physical activity. From the data, it is evident that the participants hold their religious groups in high esteem. When asked about the role her

religious group played in her life, Abena responded, “You know without God you are just there. So, Christianity helps us a lot in different ways.” Asantewaa also said, “The church helps me listen to God’s word and guide me on living my life.” Esi stated that, “I believe that religion helps me on how to live a Godliness life.” Finally, Hawa described it this way:

I grew up seeing both of my parents and everybody in my household as Muslims. My love for our veil and the way we behave at the mosque make me happy. I don’t wish to be in any other religion. Since I was born into the religion, nobody can change my mind.

The statements by these participants made it clear how deeply connected they were to their religion and such, any attempt made by their religious leaders to help raise their physical health would likely be well accepted by their members.

In conclusion, in the attempt by all religious groups to safeguarding their members’ salvation, they should devote some time also in making sure their members are physically active because “a sound mind lives in a sound body” (Miletus, 624-546 BC). They can do so by at least having a day each week or biweekly to organize some walks or aerobics for their members. By organizing physical activity for their members, it will help increase their social support. Eyler et al. (1999) found out that women with social support engaged in physical activity for at least 30 minutes for five days in week. Downie et al. (2008) also suggested that social interactions during physical activity could be seen to be more positive if the behaviour was perceived as fun and enjoyable, for instance walking with friends and engaging in team sports. Engaging in walks or aerobics with others will create a social support for them which will increase the possibility of them engaging in physical activity. In classifying this barrier, it will be placed under the institutional level of the ecological model.

Lack of Knowledge of Organized Physical Activity. Participants were asked what they viewed as barriers to physical activity for women in their communities. Among the nine participants, five of them answered that women in their community lack the knowledge related to exercise or organised physical activity. Fynnba responded, “I think it is the lack of knowledge. If we get someone to teach us, we will do.” Egyirwaa also said, “We were not trained with it that is why we don’t do it.”

The lack of knowledge of physical activity of my participants showed throughout the interviews by how they answered certain questions. There is a lack of a phrase for physical activity in my local dialect. And I believe that this absence contributed to the participants not always understanding the phrase I used. When I asked them what they think physical activity is, three of the participants mentioned they did not understand. The others who answered gave an explanation regarding exercise as the only component of physical activity. They did not see their household chores or their traditional farming and selling as a means of contributing to their physical health. When Esi was asked if she thinks household chores like washing bowls and sweeping are part of physical activity? She responded:

Ammm! I will say that some part of sweeping and washing bowls is part of physical activity, but it is not entirely physical activity. Because it does not involve the whole body. But if you can skip a little after sweeping or washing bowls then you are good to go.

When I also asked if she thought a person had engaged in physical activity if he or she walked for about three miles to farm, weeded and walked back, she answered:

We will say that he or she has engaged in physical activity, but I will say the time that the person used is what is not the right time. Because I know that one can engage in

physical activity or exercise only in the morning for it to have a better result. So, when you wake up in the morning and you do that then it will help you.

I took the opportunity to share with Esi, the views of Pedišić (2014) on what physical activity is. Physical activity comprises of all activities, at any intensity, which is performed any time of the day or night (Pedišić, 2014). She was happy I gave her that explanation.

Tuakli-Wosornu et al. (2014) stated that urban women in Ghana are motivated to participate in physical activity because of their perceptions about it and its contribution to their health. However, these women in the rural areas lack proper perceptions about physical activity and what they regard as physical activity. When they lack knowledge about physical activity, they are restricted from engaging in it. In classifying this barrier, it will be placed under the intrapersonal level of the ecological model

The Contribution of Children in Household Chores. I earlier discussed household chores as one of the avenues that facilitated my participants' involvement in physical activity. There were some conversations on how their children contributed to household chores, and I found out that the younger ones in the family did help these women in their day-to-day activities. Among the nine participants, two said that their grown children had moved to cities to find jobs leaving them to do their household chores alone most of the time. The seven other participants mentioned how much their younger children helped them in their household chores. Asantewaa mentioned, "Aww! For sweeping, my girls do help me a lot. They fetch water, wash the bowls. For household chores, the children are great help." In Efuah's response to whether her household chores had decreased or increased due to having children, she said "Yes, it has changed. I have grown-up children. So, the things that I used to do them alone, they do it now. For instance, they sweep now."

Due to courtesy in rural areas of Ghana, children are supposed to help the elders in the house to do some of the household chores. As a child, you are seen to be a bad child if you just sit and watch your mother sweep or wash bowls in the house. I mentioned earlier that when women engaged in household chores, it helped them stay active. However, as their children's ability grows to help with household chores, women can tend to lose some of this benefit. This is why it will be beneficial if these women have access to other resources to engage in physical activity to supplement what they get (or formerly got) from their traditional work especially.

In conclusion, this chapter of the study brought to light the findings of the research by answering the first research question. I discussed the eight enablers and five barriers that shaped the rural Ghanaian women's participation in physical activity. Chapter Five will discuss the findings of the study and situate them within the context of the current literature and also explore some answers to the second and third questions. In classifying this barrier, it will be placed under the interpersonal level of the ecological model.

Chapter Five - Discussion

This chapter will discuss the findings of the study and situate them within the context of the current literature while at the same time exploring some of the answers to my second and third research sub-questions. I will begin by discussing the overall themes that developed from the data and some of the implications of the findings such as recommendations for physical activity programs. Following this, the limitations of the current study and future research considerations are discussed.

Themes

This section discusses four main themes that emerged from the findings presented in Chapter Four: life cycle and physical activity involvement, the community's role in providing physical activity avenues, the role of religious groups in promoting physical activity involvement, and how organized physical activity can be established and maintained. Finally, the section shows the relevance of the ecological model to my study.

Life Cycle and Physical Activity Involvement

Upon reflection, there seemed to be three life stages in the lives of these rural women who participated in my study: childhood, adulthood, and middle age. These various time frames influenced women's involvement in physical activity. I discuss these influences below.

Childhood. In their childhood and youth years, the women had the chance to participate in sports. The curriculum in their schools also provided opportunities for their involvement in other forms of physical activity. Webster and Suzuki (2014) found various physical activity opportunities that children gain in their school settings. They have the

opportunity to engage in sports and games and participate in break-time activities such as arranging their desks for class. They can also join extra-curricular activities that facilitate movement. My participants described their involvement in school sports and physical activity. Some also shared their experiences of continuing in some of these activities even after they finished school until a certain stage in their lives. However, similar to Kinsman et al. (2015), in most of the participants' schools, the sporting facilities were mostly used by boys and much less often by girls. Kinsman et al. (2015) also stated that girls are less likely than boys to engage in organized physical activity. It can be argued in this setting that, in the absence of organized physical activity, girls and women's physical activity primarily comes from engaging in household chores such as sweeping, doing dishes, cleaning washrooms, washing clothes and cooking food for their household.

In summary, this life stage introduces girls to physical activity and the various "acceptable" ways girls can engage in physical activity without them really being conscious of it. Girls directly or indirectly engage in some kind of physical activity at school as well as were introduced to some household chores.

Adulthood. The next stage is the beginning of the participants' occupational and married lives from the ages of early 20s and late 30s. This stage can be seen as the most active years of their lives. During this time, they get most of their physical activity from their occupation as well as household chores. Occupations like farming and selling were the main jobs for my participants, and their duties in these occupations required a great deal of physical activity. As documented earlier in Chapter Four, some of these women walked over six kilometres to their farms. They farmed on at least three days a week. The participants weeded, cultivated and harvested their crops with little or no help from any

technology or mechanization. Asai et al. (2018) found that depressive symptoms were significantly lower for their participants who farmed longer hours. They also stated that depressive symptoms were lower for those who even farmed for a short duration.

Those who sold goods also walked great distances. These women walked from one town to another. They rarely used a vehicle to commute because potential customers needed to identify their goods as they walked to buy them. Aikins et al. (2014) recognized the physical activity demands in urban women's occupations like street hawking. A similar conclusion can be made for these rural women who frequently walked over six kilometres each day to sell.

At this stage of the participants' lives, they bear primary responsibilities for household chores and the physicality these chores require. By this age, they have usually started a family, and their children are likely at a younger age where they cannot yet contribute to the household chores. This result in the women doing most, if not all of the household chores. As a result of traditional gender roles and division of household labour, the women must take care of both their children and husbands which included cooking meals, washing clothes, cleaning dishes and the like, while at the same time farming or selling or both.

In conclusion, during this middle stage of their life cycle, the women were most physically active. During this time, they also learned the necessary skills from their parents to take over their occupations like farming and selling. However, this was also when they began to lose their involvement in organized physical activity because they had to concentrate on their early married lives and cater to their families' needs.

Additionally, this was also time of life when many women migrated to larger cities with

their husbands to secure greater financial assets. When they did so, those left behind lose their friends and, therefore, an important enabler of physical activity. Many of the participants cited a lack of friends or playing partners as a reason their participation in organized physical activity declined. Booth et al. (2000) stated that having friends who frequently participated in physical activity influenced individuals to engage in regular physical activity.

Middle Age. This last section covers stage from 40 to 60 years, the current age of my participants. At this phase of their lives, all motivation to engage in organized physical activity was lost. They did not have any physically active friends; their emphasis was placed on their occupation and how to raise money and food for their family. After all of their responsibilities were taken care of, participants stated they were left with little or no time to engage in organized physical activity. Nadri et al. (2016) linked time limitation to the barriers of older adults' involvement in physical activity. The participants also stated they could not engage in organized physical activity due to fatigue from their involvement in their occupation and their family's care. Other researchers have confirmed fatigue, as a major barrier to women's physical activity involvement (Brownson et al., 2000; King et al., 2000; Wilcox et al., 2000).

Finally, at this stage, these women experienced a decrease in their involvement in household chores. This happens because their children were now older and took on a more significant number of household duties. When this happened, the majority of physical activity they used to derive from household chores was no longer there, and as a result, they were at a higher risk for diseases associated with lack of physical activity,

such as muscular and cardiorespiratory diseases, unhealthy bone, hypertension, stroke, type 2 diabetes, osteoporosis, and cancer (CDC, 2019).

This theme presented how physical activity involvement for women in rural Ghana was influenced by life stage. It also showed how physical activity involvement decreased for women as they reached middle age. It was essential to understand this life cycle so that interventions will be specifically designed to suit each stage. Due to the natural gender-based flow to women's lives in Ghana it was important to know that each of these various stages might need a different kind of intervention.

It is imperative to help aging women in rural areas to become involved in organized physical activity. This will ensure that, as they lose their "built in" physical activity from their occupation and chores due to aging, they can rely on other forms of physical activity such as walking, jogging and sporting games for both health and leisure.

The Role of Community in Providing Physical Activity Avenues

In this study, I saw the community as the main force in creating avenues for physical activity. The creation of physical activity avenues by the participants' communities could be seen as both intentional and unintentional. This can be intentional in the sense that these communities have provided playing fields that were constantly made safe, clean, and accessible to everybody. However, most playing fields were only utilized by boys and men. The communities also included sporting events in their annual festival events. Kirby et al. (2007) found that a necessary component for physical activity involvement is a supportive physical environment.

My participants expressed feeling safe when they walked by the roadside. They only stated a fear of reptiles such as venomous snakes or lizards on their walking paths. However, these women felt safe by the road because of the paucity of vehicles in these rural areas. A study conducted by Aronson and Oman (2004) in Oklahoma on exercise and physical activity among rural-dwelling senior citizens revealed that their participants did not feel safe in the outdoors and they requested more indoor areas. They had concerns about traffic, the weather, looking out for dogs, limited sidewalks, and their safety at night. Compared to these findings, my participants did not express any interest in indoor facilities since they were unaware that such facilities exist. They also did not report having issues regarding weather or traffic. I, however, think the rural communities need to do more to create wider (and thus safer) walking paths.

The community unintentionally created avenues for physical activity involvement through their communal labour practices. Communal labour was organized almost weekly, according to the majority of my participants. Activities like weeding, fetching and carrying sand and stones, sweeping, and the like were all vigorous activities and were good examples of physical activity. It was seen to be unintentional because these folks did not know that their communal labour involvement created an avenue for physical activity participation.

In summary, these participants' communities are helping their inhabitants engage in some forms of physical activity. Still, they need to do more to get these women out of their homes and enjoying organized physical activity. The communities were the first contact to these participants aside from their family. As such, the community should be at the forefront in getting people engaged in physical activity by extending the organization

of sporting events during festivals to other religious festive occasions like Christmas, Easter, Eid al-Adha and Eid al-Fitr. These are religious occasions, but usually, the entire community joins to celebrate.

The Role of Religious Groups in Promoting Physical Activity Involvement

Religion is an important part of my participants' lives. My participants expressed that their religious groups played a meagre role in helping them engage in physical activity. Religious groups could have a more powerful impact on their members if they helped organize physical activities for them. For a religious group to be sustainable, it needs engaged members. Holt et al. (2013) found out that African Americans, on average, tend to have a relatively high level of religious involvement and suffer a higher burden on health conditions than other groups. This can also be said for my participants.

Several researchers have reported a significant relationship between social support and physical activity (Booth et al., 2000; Courneya et al., 2000; Wendel-Vos et al., 2007). When religious groups supported or encouraged physical activity, the social supports created can be relied on to help women participate in physical activity. Ellison et al. (2010) stated that individuals involved in faith communities might receive extra and unique benefits in terms of social support. Musick et al. (2000) also reported that people involved in religious groups tend to have larger social networks than those who are less involved. Kanu et al. (2008), in their study about exploring associations between church-based social support and physical activity, reported that individuals who received information and support for physical activity from their clergy were more likely to meet recommended physical activity levels.

In conclusion, religious groups have a more significant role to play in getting their members to engage in physical activity. “Changing health behaviours in community requires both input from individuals who possess knowledge and credibility and a receptive audience” (Anshel & Smith, 2014, n.p.). However, religious leaders who are seen to be one of the groups of individuals who are in the position to promote community change are virtually ignored in the applied health and consulting psychology literature (Anshel & Smith, 2014). Religious leaders possess extraordinary credibility, communicative skills, and persuasive powers which they can channel in promoting virtues of healthy living (Anshel & Smith, 2014). This is why I think religious groups could use their position to create programs that will enhance physical activity involvement among women. When this is done, women can dwell in both the social support and a social network which supports their physical activity involvement. For example, Banerjee et al. (2017) found that “Mosques could be beneficiary in providing physical activity opportunities for Muslim women” (p. 349). They also concluded that “culturally relevant structured networks such as mosques are important assets when designing healthy lifestyle interventions for South Asian Muslim women” (p. 349).

How Organized Physical Activity can be Established and Maintained

Women in rural areas most often receive the majority of their physical activity through their household chores and traditional farming and selling. However, it was also obvious that from the ages of 40-60, they lost some or all of their involvement in their physical labour because their children took over many of these tasks. Therefore, it is imperative to introduce these women to an organized physical activity to replace their lost

physical activity from their physical labour and as well as to introduce fun and leisure aspects of physical activity. Brajša-Žganec et al. (2011) stated that leisure activities help people build social relationships, feel positive emotions, and acquire additional knowledge and skill that improve their quality of life.

During the interviews, participants were asked for their suggestions on how organized physical activity in their communities could be successful in gaining women's participation. They stated that they needed someone who would be committed to organizing them by designing programs that could get them involved. Tuakli-Wosornu et al. (2014) recommended that there should be culturally relevant fitness programs to inspire women in the urban areas of Ghana to participate in physical activity. This suggestion can also work in rural areas as well. Offering a culturally relevant activity would make it more likely that women like my participants would get involved. For example, organized physical activity offerings that utilize dance are more culturally relevant; therefore, they may be more successful in getting women to participate. In such a case, aerobics mixed with some forms of cultural dance such as "Apatampa"¹¹ and "Adowa"¹² could be used to form engaging aerobics routines that Ghanaian women could ultimately enjoy. Similarly, Olvera (2008) suggested that mental and physical health can be promoted in subgroups that often have lower amount of participation in physical activity by the use of cultural dance.

¹¹ Apatampa is a recreational dance for women that is often performed for festivals, puberty rites, and wedding.

¹² Adowa dance is a dance by the Akans of Ghana. It is performed at ceremonies such as marriage, naming ceremony, funerals, enstoolment and destoolment of chiefs and queen mothers.

My participants also recommended that any organized physical activity program should utilize music to gain the attention of women. Macone et al. (2006), in their study on music and physical activity in psychological well-being, found that women exercised longer with music than without. Music listening is a recommended intervention for exercise conformity and lifestyle change because it is accessible, inexpensive, and convenient (Brawley et al., 2003). Clark et al. (2016) stated that, "music therapists are ideally placed to implement and investigate music listening as an intervention for increasing levels of physical activity" (p.100). Clark et al. (2016) found that participant-selected music did not increase the proportion of participants achieving the recommended amounts of physical activity but may have contributed to exercise-related benefits such as an increase in exercise adherence and participation. One of my participants gave an account of what happened when a nationally known soccer coach, originally from their community, came to organize morning jogging. The participant reported that the attendance for this event was very low because he did not include music.

Before I conclude this theme, it is important to discuss the intersection between low income, rural poverty, women's work, societal perception of women's role and how this affects women's involvement in physical activity. It is hard for women to fulfill their physical activity needs because they always must attend to the needs of their children first. When their day-to-day existence requires most of their working hours, low-income women do not enough time leftover to participate in organized sports or physical activity and thus, show lower participation rates. Scharff et al. (1999) confirmed that family characteristics such as having children were strongly connected to women's inability to engage in structured and intense physical activity. Brown et al. (2009) also stated there

was a decrease in physical activity associated with marriage and childbirth among young women. A national survey in the US indicate that low-income women have the highest rates of inactivity (Albright et al., 2005). Rural women in Ghana face poverty and thus, they have to spend much of their waking time doing farming and selling work. At the end of each day, they do not have the temporal, mental, or physical space (i.e. energy) leftover to add additional physical activity. The expectations on women's work make it harder for women to do physical activity, no matter where they live in the world.

In conclusion, women in these communities needed someone with advanced knowledge and skills related to physical activity leadership to facilitate both physical activity and leisure activities. Culturally relevant activities, including local dance and music, should be core components of these activities.

The Relevance of the Ecological Model to my Study.

The ecological model of health behaviour developed by McLeroy et al. (1988) and Sallis et al. (2008) was chosen as the theoretical framework for this research. As previously noted, this model has five levels - the intrapersonal, interpersonal, institutional, community and policy levels.

The interview questions sought to determine whether the levels and factors would be the same for these women on what influences their involvement in physical activity. Regarding the first level, which is the intrapersonal level, I found out that factors such as lack of time, lack of knowledge about organized physical activity, and poverty were the barriers and parents as role models was an enabler for physical activity involvement. On the interpersonal level, factors such as lack of friends and children's contribution in

household chores were the barriers, and my participants' involvement in household chores was an enabler.

Three factors were found at the institutional level. The inability of religious groups to organize physical activity was the barrier for this level. The role of physical education and sports and my participants' occupation were enablers of physical activity involvement. The community-level, on the other hand, had four enablers. They were the availability of playing fields, festival time, the role of Saturday, and communal labour involvement. The barrier for this level was the inability of the women to utilize the playing fields available.

The policy level of the ecological model was not dealt with in the majority of the interviews. I initially suspected that participants would say there were no policies regarding physical activity in their community. This was confirmed when I asked one participant about physical activity policies in her community – she confirmed there were none to her knowledge. Considering the medium (telephone) used for the interviews and the brief answers I received from my participants, this did not allow me to probe deeply regarding policies. Instead, in order to have a flowing conversation, I centered my questions on my participants' daily activities. However, even though I did not have conversation regarding policies, I realized that the communal labour is also a policy. That is why when people do not attend, they are fined.

I would also like to note that some of the factors may overlap different levels in the ecological model. For instance, I placed parent as role model under the interpersonal level, but it could also be seen as belonging to the intrapersonal level, in such that parents are serve as support system (interpersonal), but also have role model and other

influencing behaviours (intrapersonal). Another overlap can be seen with lack of knowledge on organized physical activity, which was placed under the intrapersonal level primarily, but it could be argued that this also fits under the institutional level because of education. These women didn't get the adequate knowledge in schools because there is a lack of sports education in schools.

In conclusion, I found some factors that confirmed the ecological model was useful to this study. I also found some similar factors as other researchers. However, I could not assess much on the policy level given the limitations of the phone and absence of policies related to physical activity. Figure 2 is a model developed for enablers and barriers to physical activity participation for my participants. This model did not follow the arrangement of the ecological model but was arranged based on the number of factors found for each level, hence, starting from the institutional level, which had the least factors, to the community level with the highest factors.

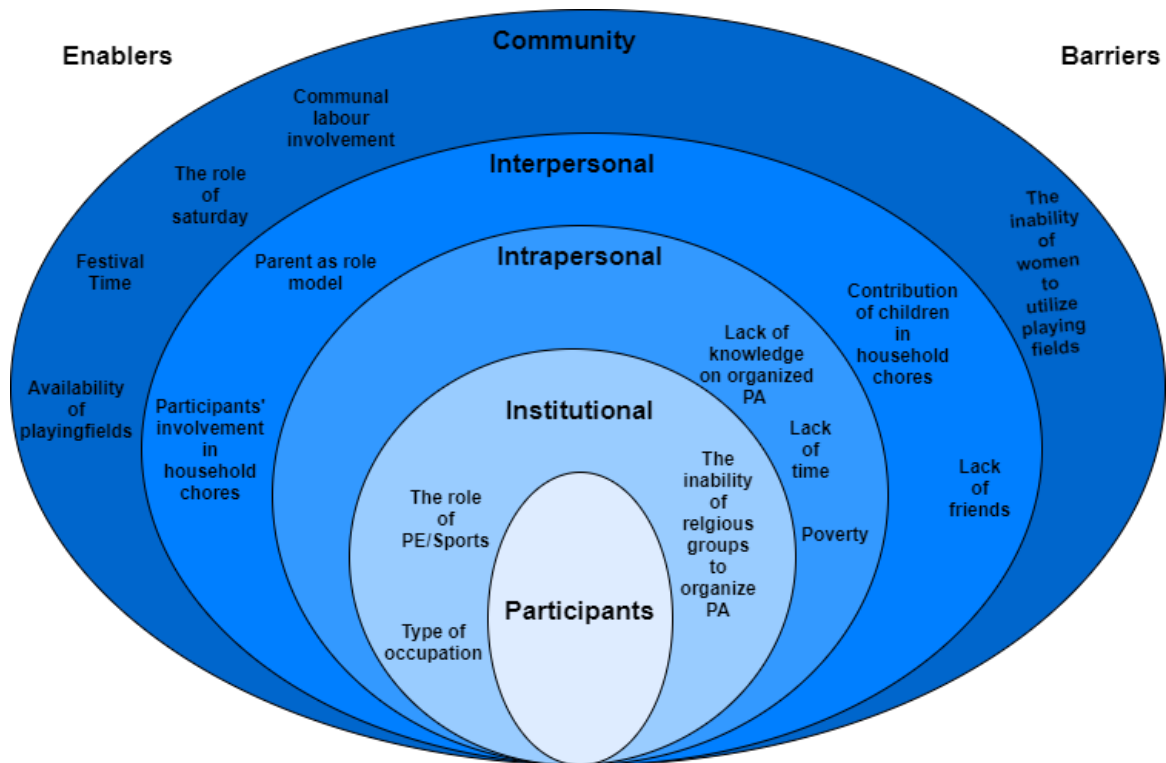


Figure 2: A model of enablers and barriers to physical activity participation (2021).

Limitations

In this section, I will discuss four limitations of this study: The influence of COVID-19, the sample, the language of the data collection, and lack of previous studies. One of the most significant limitations was due to the COVID-19 pandemic because it required a significant redesign around data collection and the redesign created some technological barriers to data collection.

The Influence of COVID-19

There was an initial plan to travel and collect data in person; however, this did not happen because of the COVID-19 pandemic and the resulting travel restrictions. This resulted in the necessity of using telephone interviews which had challenges. The conversations with participants resulted in more short answers. It was harder to

communicate in terms of technology where connections were dropped most at the time, and participants had to call again. This made the interviews more restricted and tedious. The shorter answers provided made it difficult to get rich quotations while writing the findings.

The lack of in-person data collection created a challenge in participant recruitment and ultimately led to lower quality interviews. I was also not able to clarify things with participants because I could not do in person data collection. Lastly, being away from Ghana made it harder to do detailed member checking with participants.

The Sample

I sampled women from rural areas in the central region only. However, I had diverse participants who were either Christians or Muslims. The data and the study's conclusions are not generalized to a larger population, but they give a telling glimpse into the lives of rural women's physical activity. Because I was not able to travel, I could not have access to different women. Recruitment was based on women who had access to phones and those who could hear the announcement.

The Language of Data Collection

Since I conducted the interview in Fante, the dialect of the region, there was likely a limitation in language. My supervisor could not read the original transcripts because of the language used. She could only read the translated version, so I may have missed some of the meanings. I also struggled to find a phrase that expressed physical activity in our language. That accounted for why I got responses from participants on the meaning of

physical activity, which indicated they only knew of sports or exercise as physical activity.

Lack of Previous Studies

This research was designed to collect data on a population that is rarely found in the physical activity literature. Due to this, I could review limited literature in Chapter Two on women in rural areas in Africa. However, I broadened my search and therefore, physical activity research from other regions of the world on women and adults was used to inform the study.

Recommendations for Physical Activity Programming in Rural Ghana

This section will respond to the third research sub-question of my study. Examining what my study found and drawing from my experience of being a physical educator in Ghana, I suggest these recommendations to rural community leaders, religious leaders, school recreational providers, the Ghana Educational Service, and all levels of government in Ghana. I made these recommendations paying attention to the CDC (2019) report, with recommendations from organizations such as the American Medical Association (2004), WHO (2008), and the Institute of Medicine (2009) on how physical activity can be promoted. I believe, and my data suggests that if these recommendations are considered, the factors identified as barriers to physical activity could be removed or progressively turned into enablers of physical activity. The recommendations are:

1. It is recommended that the district physical education/sports directors collaborate with community leaders, religious leaders, and the health ministry to organize

sensitization programs to educate women on the importance of physical activity. This can be done quarterly and can be done through the community centres' information service, churches and mosques gatherings, marketplaces, and hospitals/clinics.

2. It is recommended that religious leaders make an effort to include physical activities like walking, jogging, and aerobics in their monthly schedules to involve women.

3. It is recommended that the government, in conjunction with the ministry of education, create a sports policy that calls for fairness and equity in representation in sports. This will help achieve the millennium goal of promoting gender equality and empowerment of women. This will also allow every girl to acquire the necessary basic motor skills to participate in physical activities and sports. Finally, this would go a long way in instilling girls' physical activity behaviours and shape how they live in their old age.

4. It is recommended for the ministry of education to provide resources to all schools, which include qualified physical education personnel, sporting facilities, and equipment. This would enable them to develop and build a positive attitude towards participation in physical activities and sports.

Future Research

I have three recommendations for possible future research to advance the knowledge in this area:

1. I recommend that research be conducted with women who played a sport in their youth and those who didn't have such an opportunity. It would be educative to

compare how their lives are the same and different at middle life in regard to physical activity levels. It would also be important to understand how these individuals navigated through the various barriers to participate in sport.

2. My study could be extended. Instead of utilizing interviews for participants to describe their physical activity involvement, future research could utilize a measurement design with similar participants. The participants could be equipped with an accelerometer to measure their daily physical activity. Since my participants gave self-reports on their physical activity level and knowing that there can be limitations in the accuracy of self-reported physical activity data, a logical next step will be to conduct a study that may provide more accurate measurement of participants' physical activity levels using quantitative methods.

3. I suggest that future research delve more into the policy level of the ecological model. I will suggest that a study interviewing rural community or political leaders about existing and planned physical activity policies could fill a knowledge gap that my particular participants could not.

Conclusion

This study was conducted to ascertain the factors that influence rural women's involvement in physical activity in Ghana. It was clear that the study participants get a large amount of physical activity from their involvement in their traditional occupations and household chores. However, they lack involvement in organized physical activity such as fun walks and jogging, group games, or any type of sports. As these women grew older, it is evident that they may lose their involvement in their traditional work and

household chores. In order for these women to stay active and avoid diseases related to inactivity such as hypertension, diabetes, or cancers, there is the need for them take part in some other physical activities which will bring fun and leisure. To help these women, various stakeholders such as community leaders, government officials and recreational providers should pay attention to the recommendations made from this and other similar research.

Before data collection, I anticipated not finding many enablers for physical activity for the participants. To my surprise, these women are greatly engaged in occupational physical activity but lose out on organized physical activity. However, the five barriers to physical activity identified for the participants need to be removed or progressively turned into enablers. By introducing women to organized physical activity, they could gradually replace the physical activity they traditionally gain from their livelihood as they begin to age out of them.

Despite the limitations of this study and the challenges of COVID-19, this study makes a significant contribution. It advances the understanding of women's participation in physical activity in Ghana because they are rarely studied.

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Appendix A - Participant Recruiting Announcement

The following recruiting announcement will be delivered by Hawa Abdul-Aziz, a friend of the researcher, to the community broadcasting personnel using physically distant means. The recruiting announcement will be read to potential research participants over the community announcement system. This is a local broadcast system whereby all community matters are announced over loudspeakers to the community.

Dear Potential Research Participants,

Alice Quainoo is a graduate student in the School of Human Kinetics and Recreation (HKR) at Memorial University of Newfoundland (MUN) in Canada. As part of a requirement for the completion of a Master's in Kinesiology, she is conducting a research study. Ms. Quainoo would like to invite women between the ages of 40 and 60 to participate in her thesis research. She is looking forward to speaking with women living in the rural areas of Ghana to help learn what facilitates or constraints your involvement in physical activity.

You are invited to share your experiences of physical activity such as how your daily work contributes to your participation in physical activity, what your religious organization adds to your involvement in physical activity, and how your cultural background has affected your involvement positively or negatively. Ms. Quainoo would like to learn more about what facilitates or constraints your involvement in physical activity.

Your participation in this study is voluntary. You will be asked to take part in an interview over the phone or Internet with Ms. Quainoo. Your identity in this interview will be kept confidential. If you choose to become involved, you will have to give an oral consent. Giving an oral consent states your willingness to participate in the phone or Internet interviews on what affects your involvement in physical activity, as well as your willingness to be audio recorded. You may choose to skip answering any question you do not wish to answer. If you decide to withdraw from the research study, you can do so at any time. In addition, you can contact the researcher at any time at the address provided below if you have any questions or concerns.

By accepting the invitation to participate in this research, the results will help women gain insight into what facilitates or constraints their involvement in physical activity and what they can do to ensure they are doing enough physical activity.

All information obtained from you as a participant is considered completely confidential and will be safely stored in a locked filing cabinet. Every attempt will be made to keep your information confidential, however, Ms. Quainoo cannot guarantee confidentiality. Some steps put in place to increase the confidentiality of the research include: Consent forms being stored in a cabinet in the office of Ms. Quainoo's supervisor, which is a

Appendix B – Ethics Approval



Interdisciplinary Committee on
Ethics in Human Research (ICEHR)

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ICEHR Number:	20210672-HK
Approval Period:	October 7, 2020 – October 31, 2021 Remote Methods Only
Funding Source:	
Responsible Faculty:	Dr. TA Loeffler School of Human Kinetics and Recreation
Title of Project:	<i>Factors Affecting Rural Women's Involvement in Physical Activity in Ghana</i>

October 7, 2020

Ms. Alice Quainoo
School of Human Kinetics and Recreation
Memorial University of Newfoundland

Dear Ms. Quainoo:

Thank you for your correspondence addressing the issues raised by the Interdisciplinary Committee on Ethics in Human Research (ICEHR) concerning the above-named research project. ICEHR has re-examined the proposal with the clarification and revisions submitted, and is satisfied that the concerns raised by the Committee have been adequately addressed. However, please be advised that level 2 of the MUN COVID-19 Framework stipulates that only the remote methods in your approved protocol can be used at this time, and any future in-person and/or field research requires that you first request and obtain permission through the framework, as detailed at <https://www.mun.ca/research/ethics/humans/icehr>.

In accordance with the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans (TCPS2)*, the project has been granted *full ethics clearance to October 31, 2021*. ICEHR approval applies to the ethical acceptability of the research, as per Article 6.3 of the *TCPS2*. Researchers are responsible for adherence to any other relevant University policies and/or funded or non-funded agreements that may be associated with the project.

The *TCPS2* **requires** that you submit an Annual Update to ICEHR before **October 31, 2021**. If you plan to continue the project, you need to request renewal of your ethics clearance and include a brief summary on the progress of your research. When the project no longer involves contact with human participants, is completed and/or terminated, you are required to provide an annual update with a brief final summary and your file will be closed. If you need to make changes during the project which may raise ethical concerns, you must submit an Amendment Request with a description of these changes for the Committee's consideration prior to implementation. If funding is obtained subsequent to approval, you must submit a Funding and/or Partner Change Request to ICEHR before this clearance can be linked to your award.

All post-approval event forms noted above can be submitted from your Researcher Portal account by clicking the *Applications: Post-Review* link on your Portal homepage. We wish you success with your research.

Yours sincerely,

Kelly Blidook, Ph.D.
Vice-Chair, Interdisciplinary Committee on
Ethics in Human Research

KB/bc

cc: Supervisor – Dr. TA Loeffler, School of Human Kinetics and Recreation

Appendix C – Permission Letter



School of Human Kinetics and Recreation
St. John's, NL Canada A1C 5S7
Tel: 709-864-8130/29 Fax: 709-864-3979 www.mun.ca/hkr

The Kings and Queens

Ajumako-Mando Traditional Council

PMB.

Dear Nana Okomfo Afful X,

Request to use your community as my research community

I am a native of Ajumako-Mando and currently doing a Master's Degree at Memorial University of Newfoundland and Labrador in Canada. As part of the fulfillment of the program, I must complete some research. I am researching the factors that affect rural women's involvement in physical activity in Ghana.

I have chosen to do my research here because this is my hometown. I was born and grew up here. I will be recruiting women between the ages of 40-60 years who can help inform the conversation around my research.

By exploring this topic, the women in our community will gain insight into what facilitates or constrains their involvement in physical activity and what they can do to ensure they are doing enough physical activity. The government can utilize the findings of this research to find better ways to provide sporting facilities and programs/resources that can be accessible to communities like ours. Also, organizations like churches,

mosques, workplaces, and schools may be able to utilize the findings to create more opportunities to incorporate physical activities into their day to day activities. Lastly, the research may provide an impetus for the community to help facilitate physical activity by helping create safer walking areas.

I will be grateful if you grant my request.

Yours sincerely,

Alice Quainoo.

(+17097633202)

Appendix D – Approval Message

Hello Alice,

Sent your letter to the chiefs and it has been approved. I was given a verbal approval and you have been given the person to start with your research.

Thank you

...

Appendix E - Informed Consent Form and Process

Title: Factors affecting of rural women’s involvement in physical activity in Ghana.

Researcher(s): Alice Quainoo, Human Kinetics and Recreation Department, Memorial University of Newfoundland and Labrador.
aquainoo@mun.ca

Supervisor(s): Dr. TA Loeffler, Memorial University of Newfoundland, Human Kinetics and Recreation Department. taloeffler@mun.ca

This consent script will be translated into Fanti and read out to participants before the interview begins.

You are invited to take part in a research project entitled, “*Factors affecting of rural women’s involvement in physical activity in Ghana.*”

Reading this form to you is part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. It also describes your right to withdraw from the study. In order to decide whether you wish to participate in this research study, you should understand enough about its risks and benefits to be able to make an informed decision. This is the informed consent process. Take time to listen this carefully and to understand the information given to you. Please ask me the researcher, Alice Quainoo, if you have any questions about the study or would like more information before you consent.

It is entirely up to you to decide whether to take part in this research. If you choose not to take part in this research or if you decide to withdraw from the research once it has started, there will be no negative consequences for you, now or in the future.

Introduction:

My name is Alice Quainoo. I am a second-year master’s student of Human Kinetics and Recreation Department at Memorial University. As part of my master’s program, I am conducting research under the supervision of Dr. TA Loeffler.

Purpose of Study:

The purpose of the study is to explore the factors affecting rural women's involvement in physical activity in Ghana. The objectives of this study are to help find barriers and facilitators of physical activity. Also, organizations like churches, mosques, workplaces and schools, may utilize the findings to create more opportunities to incorporate physical activities into their day to day activities.

What You Will Do in this Study:

I will be asking you questions to elicit answers from you, this session will be recorded, transcribed, and used to complete my study.

Length of Time:

This interview will be conducted through a phone call, WhatsApp or Skype. There is only one session and it will last for 60-90minutes.

Withdrawal from the Study:

You may choose to withdrawal from this study at any time by simply letting the interviewer know that you do not wish to continue to participate. Any data that has been collected up to that point will be marked as incomplete and deleted. It will not be used in the study.

If you would like your data removed once data collection has been completed, you may contact the interviewer no later than Jan 01, 2021 to request that it be removed.

Possible Benefits:

This study may not benefit you directly, but it may help women in the rural areas gain an insight in what facilitates or constrains their involvement in physical activity.

Possible Risks:

There is a risk to this study. A conversation around factors affecting your involvement in physical activity could lead to some emotions. You may have experienced something uncomfortable in the past regarding your involvement in physical activity that you do not wish to discuss. You can choose not to respond if that is your preference. Here is a contact for counselling services should the need arise to speak to someone. Catherine Adzadi, a counsellor at Legacy Girls' College, can be contacted on +233275175122.

Confidentiality:

The ethical duty of confidentiality includes safeguarding participants' identities, personal information, and data from unauthorized access, use, or disclosure.

Your privacy and confidentiality are of prime importance to us. Throughout the process we will refrain from using your real name and all notes will be coded with a participant number. All data will be stored on a secured password protected thumb drive.

Anonymity:

Every reasonable effort will be made to ensure your anonymity.

Recording of Data:

The interviews will be audio-recorded and translated into English and it will be done with accuracy. All digital recordings will be stored in a password-protected file on the primary researchers' computer. All identifying information will be removed and one of the supervisory committee members, Dr. TA Loeffler or Dr. Anne-Marie Sullivan will review the transcripts to ensure anonymity.

Use, Access, Ownership, and Storage of Data:

- Recorded data as well as any written material will be kept on a secured thumb drive that is password protected on a computer purchased for research purposes. The computer will be the property of the School of Human Kinetics and Recreation and will be stored in Dr. TA Loeffler's office, PE 2011A.
- Data will be kept for a minimum of five years, as required by Memorial University's policy on Integrity in Scholarly Research

Reporting of Results:

The results from this interview will be used for my thesis. It will be paraphrased, summarized, and published. Upon completion of this study, my thesis will be available at Memorial University's Queen Elizabeth II library and can be accessed online at: <http://collections.mun.ca/cdm/search/collection/theses>.

Sharing of Results with Participants:

Once this thesis is complete, you will be able to access all summaries and written reports related to it. I will make this available through a presentation to your community.

Questions:

You are welcome to ask questions before, during, or after your participation in this research. If you would like more information about this study, please contact: Alice Quainoo, aquainoo@mun.ca /+17097633202.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to follow Memorial University's ethics policy. If

you have ethical concerns about the research, such as the way you have been treated or your rights as a participant, you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at +1709-864-2861.

Consent:

Your oral consent and name on this form means that:

- You have listened to the information about the research.
- You have been able to ask questions about this study.
- You understand what the study is about and what you will be doing.
- You understand that you are free to withdraw participation in the study without having to give a reason, and that doing so will not affect you now or in the future.
- During the interview you are allowed indicate if you do not wish to answer a question.
- You understand that if you choose to end participation **during** data collection, any data collected from you up to that point **will be deleted**.
- You understand that if you choose to withdraw **after** data collection has ended, your data can be removed from the study up to Jan 01, 2021

I agree to be audio-recorded Yes No
I agree to the use of direct quotations Yes No
I allow my name to be identified in any publications resulting from this study Yes No

By consenting to this research, you do not give up your legal rights and do not release the researchers from their professional responsibilities.

Your Oral Consent Confirms:

- I have listened to what this study is about and understood the risks and benefits. I have had adequate time to think about this and had the opportunity to ask questions and my questions have been answered.
- I agree to participate in the research project understanding the risks and contributions of my participation, that my participation is voluntary, and that I may end my participation.

Oral consent of participant:

I read and explained this consent form to the participant before receiving the participant’s consent, and the participant has knowledge of its contents and appeared to understand it.

Participant’s name/pseudonym

Date

Researcher's Signature:

I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participant fully understands what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

Signature of Principal Investigator

Date

Appendix F - Interview Guide

1. Read the informed consent statement to the subject. Ask if the interviewee has any questions and if she is willing to participate. Ask if she is willing to have the interview recorder. Tell her she can go “off the record” at any point she chooses.
2. **Demographic Information**
 - a. What is your highest educational level of school have you completed?
 - b. What is your marital status?
 - c. How many children do you have?
 - d. How long have you stayed in this community?
 - e. Have you migrated before?
 - f. What role does religion plays in your life?
 - g. What exactly do you do?
What are your responsibilities in that job?
How long have you had this position?
How have the duties of your work changed in the past years?
On average, how many days do you spend in the field each month?
If you are willing, please tell me your annual income?
 - h. Age:
 - i. Ethnic Background:
3. **Knowledge of PA**
 - a. Describe what PA means to you.
 - b. What activities do you do as PA?
 - c. Where/what spaces do you do these activities?
4. **Parents and Friends involvement**
 - a. Are your parents alive?
 - b. What do your parents think/thought of PA?
 - c. Describe the activities you do with friends.
5. **School and community involvement**
 - a. Talk about how you were involved in sporting events and/or PA during your time in school.
 - b. During what times of the year does your community organize PA activities?
 - c. How are women involved in these community activities?
 - d. Can you describe the availability and accessibility of playing grounds in your community?
 - e. What do you do during communal labour?
 - f. Describe how a typical Saturday looks like in your community.
6. **Religious groups involvement**
 - a. When and how does your church or mosque organize regular sporting events?
 - b. Describe the involvement of women during these sporting events.
7. **Facilitators and barriers of PA**
 - a. Tell me about the things that prevent you from engaging in PA.
 - b. What are some of the barriers or constraints that you believe women face in pursuing PA?

- c. Which of these do you think is the most significant barrier?
 - d. Tell me about the things that help you to engage in PA.
- 8.** Please share any ideas you have for overcoming barriers to physical activity. What resources do you think may be helpful to you in becoming more physically active?